ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM AUTHORIZATION TO DISCHARGE STORMWATER FROM A MUNICIPAL SEPARATE STORM SEWER SYSTEM TO WATERS OF THE UNITED STATES

This permit provides authorization to discharge under the Arizona Pollutant Discharge Elimination System (AZPDES) program, in compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Article 3.1; Arizona Administrative Code (A.A.C.), Title 18, Chapter 9, Articles 9, and amendments thereto; and the Clean Water Act as amended (33 U.S.C. 1251 et seq.). The Permittee, the

City of Phoenix
200 West Washington Street
Phoenix, Arizona 85003-1611

is authorized to discharge stormwater from the municipal separate storm sewer system (MS4) operated by the City of Phoenix to waters of the United States in accordance with the terms and conditions set forth in this permit.

This permit becomes effective on March 10, 2009.

This permit and the authorization to discharge expires at midnight, March 9, 2014.

Joan Card

Joan Card, Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this 3rd day of February 2009

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1.0 AUTHORIZATION

1.1 Applicability

In accordance with 40 CFR 122.26(a) (3) (i), incorporated by reference in A.A.C. R18-9-A905, this permit authorizes the discharge of stormwater from the municipal separate storm sewer system (MS4) owned and operated by the City of Phoenix (the Permittee), a large MS4, to waters of the United States (waters of the U.S.).

1.2 Authorized Discharges

Subject to the terms and conditions of this permit, the City of Phoenix, is authorized to discharge stormwater from all outfalls of the MS4 owned or operated by the Permittee to the waters of the U.S.

2.0 LEGAL AUTHORITY

The Permittee shall continue to maintain and enforce legal authority to control the discharge of pollutants to the MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize the Permittee to:

2.1 Control the contribution of pollutants to the MS4 by stormwater discharges associated with industrial activity (as defined by 40 CFR 122.26(b)(14)) and the quality of stormwater discharged from sites of industrial activity;

2.2 Control the contribution of pollutants to the MS4 by stormwater discharges associated with construction activity and the quality of stormwater discharged from construction sites;

2.3 Prohibit illicit connections and discharges to the MS4;

2.4 Control discharges to the MS4 of spills, dumping, or disposal of materials other than stormwater;

2.5 Require compliance with conditions in ordinances, permits, contracts or orders;

2.6 Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4; and

2.7 Establish requirements for post-construction stormwater controls.

3.0 LIMITATIONS OF COVERAGE

The Permittee shall obtain separate authorization under another AZPDES permit for discharges related to its industrial and construction stormwater discharges, or discharges of non-stormwaters. This permit does not authorize the following facilities or activities:

3.1 Stormwater Discharges Associated with Industrial Activity

Stormwater discharges associated with industrial activity as defined in 40 CFR 122.26(b) (14) (i)-(ix) and (xi).

3.2 Stormwater Discharges Associated with Construction Activity

Stormwater discharges associated with construction activity as defined in 40 CFR 122.26(b) (14) (x) or 40 CFR 122.26(b) (15).

3.3 Non-stormwater Discharges

Non-stormwater discharges, including De Minimus discharges as defined in Section 10 (Definitions) of this permit, except that discharges from emergency fire fighting activities are allowed where such discharges are not a significant source of pollutants to waters of the U.S.

3.4 Stormwater Discharges Mixed with Non-stormwater

Stormwater discharges mixed with sources of non-stormwater, unless the non-stormwater discharges comply with a separate AZPDES permit.

3.5 Discharges to Impaired Waters

Stormwater discharges to waters listed as impaired on Arizona's 2006/2008 303(d) and Other Impaired Waters List, except as specified in Section 6.0 (Special Conditions) of this permit.

3.6 Discharges to Outstanding Arizona Waters

Stormwater discharges to waters identified as outstanding Arizona waters (OAW) in A.A.C. R18-11-112, except as specified in Section 6.0 (Special Conditions) of this permit.

4.0 SURFACE WATER QUALITY STANDARDS

4.1 The Permittee shall protect water quality by reducing, to the maximum extent practicable, discharges that cause or contribute to an exceedance of any applicable surface water quality standard (SWQS) of the State of Arizona (Arizona Administrative Code, Title 18, Chapter 11, Article 1), including the narrative limitations applicable to waters of the U.S receiving discharges from the MS4. To do so, the Permittee shall fully implement the Stormwater Management Program (SWMP), referenced in Section 5.0, any subsequent revisions, and all requirements of this permit, including appendices.

4.2 The Permittee shall compare stormwater quality monitoring data, as measured from the outfalls specified in Section 7.0, Table 1 of this permit, to the SWQSs applicable to the waters receiving the discharge.[1] A pollutant concentration that is greater than the applicable surface water quality standard is not considered a violation of this permit when the Permittee is in compliance with the conditions of this permit. In the event that a pollutant concentration greater than the applicable SWQS is detected, the Permittee shall continue to perform routine monitoring of stormwater discharges as required by Section 7.3 of this permit.

If monitoring data collected under this permit show a recurring (more than once) exceedance at an outfall, the Permittee shall investigate and make all reasonable efforts to identify potential source(s) of the pollutant(s).[2] The Permittee shall evaluate the effectiveness of existing BMP(s) with regard to pollutant(s) of concern and pollutant reductions likely to achieve water quality standards. The permittee shall identify additional BMPs or actions to improve the quality of discharges from the MS4.

4.3 If despite full implementation of the SWMP and other requirements of this permit, the Permittee finds that a discharge contains pollutants above a surface water quality standard, the Permittee shall report this information in the Annual Report. This report shall include, at a minimum, the information specified in Section 8.3 of this permit. For recurring discharges containing pollutants above a SWQS, actions taken to investigate and identify sources and any recommended actions for reducing the discharge of pollutants shall be included in the Annual Report.

4.4 If a recurring exceedance of a SWQS exists at an outfall and it is determined pursuant to Section 4.2 that additional BMPs or actions within the control of the Permittee may reduce a recurring discharge of the pollutant(s) above the SWQS, the Permittee shall immediately begin to implement those actions, or alternatively propose to the Department an action plan including a schedule for implementation.[2] In the event the Permittee elects to propose an action plan, the plan (including the schedule for implementation) must be submitted to the Department within 30 days of identifying the recurring exceedance (in accordance with subsection 4.2). If discharge containing pollutants above an applicable surface water quality standard persists and the Permittee has not acted to reduce the discharge of pollutants, this permit may be reopened and modified to require additional actions to reduce the discharge of pollutants.

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[1] When data is analyzed consistent with Part 7.0 of this permit, and results are below the LOQ, the permittee is to report flagged data. However, in this event, such data is not considered to be an 'exceedance' or to definitively 'contain pollutants above a SWQS' for the purposes of Section 4.0.

[2] *E. coli* values above the SWQS are prevalent in Arizona in high flow precipitation events. For this pollutant, unless the permittee is discharging into a unique water or a waterbody impaired for *E. Coli*, extensive investigation is not required. However, the permittee shall review available information for obvious or high contributing sources, and human sources that can be readily managed or eliminated.

5.0 STORMWATER MANAGEMENT PROGRAM (SWMP)

5.1 Program Implementation

The Permittee shall continue to implement and maintain a Stormwater Management Program (SWMP) designed to reduce, to the maximum extent practicable (MEP), the discharge of pollutants to and from the MS4 that is owned or operated by the Permittee. The SWMP shall comply with the requirements specified in 40 CFR 122.26(d) (2) (iv), incorporated by reference in A.A.C. R18-9-A905. The SWMP shall also incorporate provisions related to the requirements specified in the permit appendices, and generally describe how the data required to be reported will be collected and maintained.

5.2 Measurable Goals

At a minimum, the Permittee shall implement and maintain best management practices and associated frequencies, amounts, timeframes, and other measurable goals specified in Appendix A of this permit. Upon the effective date of this permit, the Permittee shall begin updating the SWMP as necessary to comply with the provisions of this permit, including Appendix A. In addition to these requirements, the Permittee shall implement additional stormwater and non-stormwater BMPs or actions, as necessary, to reduce the discharge of pollutants to from the MS4 to the maximum extent practicable.

5.3 Program Updates

The Permittee shall submit two copies of the updated SWMP (plan) and associated attachments to ADEQ within one year of the issuance date of this permit. The written plan shall include all of the information specified in Appendix C and shall be organized in a similar manner. The SWMP shall be submitted to the ADEQ Surface Water Permits Unit Manager at the address specified in Section 8.6 (Reporting Location) of this permit.

5.4 Annual Program Review

The Permittee shall conduct an annual review of the SWMP, in conjunction with the preparation of the Annual Report required under Section 8.1, to evaluate the effectiveness of the program in reducing the discharge of pollutants to and from the MS4 and to assess improvements in stormwater quality.

5.5 Revisions to the SWMP

The Permittee shall update the SWMP during the permit term as necessary to improve the effectiveness of the program in reducing the discharge of pollutants to and from the MS4 to the maximum extent practicable. Changes to the SWMP made in accordance with the following do not require formal modification of this permit:

1. Addition of New BMPs: The Permittee may add practices or controls to the SWMP at any time during the life of the permit. A description of these modification(s) shall be included in the subsequent Annual Report as required by Section 8.1 of this permit.

2. Addition of Temporary or Experimental BMPs: In addition to the practices or controls described in the SWMP, the Permittee may implement temporary (i.e, event driven) practices, experimental BMPs or controls at any time during the life of the permit. Such controls may also be removed at the discretion of the Permittee. The initiation and cessation of such BMP activities and a statement of the perceived success of the temporary or experimental stormwater control shall be described in the subsequent Annual Report.

3. Increase of Existing BMPs: The Permittee may increase the amount or frequency of an existing BMP in the SWMP at any time during the life of the permit. A description of these modification(s) shall be included in the subsequent Annual Report.

4. Replacement of Existing BMPs: The Permittee may replace an ineffective practice or control with an alternate practice or control during the life of the permit with prior approval by ADEQ. The Permittee shall demonstrate the change will continue to achieve an equivalent or increased reduction in pollutants and shall provide the following information:

   a. A description of the practice, activity, or control to be eliminated;
   b. An explanation of why the original practice, activity, or control is ineffective;
   c. An analysis of how the replacement practice, activity, or control is expected to achieve the goals of those to be replaced; and
   d. An explanation of how the SWMP will continue to reduce the discharge of pollutants, to the maximum extent practicable, with the replacement of the original practice, activity, or control.

   [Note: Changing BMPs from year to year is allowed by certain Appendix A provisions in 1.A, 1.B, and II.A. These changes do not require prior approvals or modifications of the permit.]

5.6 SWMP Revisions Requiring a Permit Modification

The Permittee shall not discontinue or decrease an existing practice or control, or requirement, (including an amount, frequency, time frame, or any other measurable goal specified in Appendix A), without prior modification of this permit. Such modifications shall be proposed by the Permittee in writing, as a request for permit modification, and shall describe how the proposed change will continue to achieve an equivalent reduction in pollutants, and will not cause or contribute to an exceedance of any applicable surface water quality standard. A request for permit modification shall include the following information:

a. A description of the practice, activity, control, or program standard to be eliminated or reduced;
b. An explanation of why the practice, activity, control, or program standard should be eliminated or reduced;
c. An analysis of how the goals of the existing practice are expected to be achieved once the practice is eliminated or reduced; and
d. An explanation of how the SWMP will continue to achieve a reduction in pollutants, to the maximum extent practicable, with the elimination or reduction of the practice, activity, control, or program standard.

5.7 Program Modification Required by ADEQ

ADEQ may require changes to the SWMP as needed to:

1. Address impacts on water quality caused, or contributed to, by discharges from the MS4;
2. Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or
3. Include such other conditions deemed necessary by the Director to comply with the goals and requirements of the Clean Water Act.

Changes required by ADEQ shall be made in writing, shall set forth the time schedule for the Permittee(s) to develop the changes, and shall offer the Permittee(s) the opportunity to propose alternative program changes to meet the objective of the modification. All changes required by ADEQ shall be made in accordance with 40 CFR 122.62.

6.0 SPECIAL CONDITIONS

6.1 Discharges from the MS4 to Impaired Waters

This permit is intended to protect the impaired waters within the State of Arizona as specified in Arizona's 2004 303(d) and Other Impaired Waters List. The Permittee shall develop and implement practices and controls to reduce the discharge of any listed pollutant(s) to an impaired water to the maximum extent practicable. These practices and controls shall be clearly identified in the Permittee's SWMP.

The Permittee shall also include any listed pollutant(s) in the stormwater monitoring performed at any outfall(s) discharging to an impaired water, as required by Section 7.3.3 of this permit. Monitoring for listed pollutants shall be performed throughout the permit term at the outfall(s) discharging to the impaired water. (*Note: This provision does not require fish tissue monitoring.*)

6.2 Total Maximum Daily Load (TMDL) Allocations

At the time of permit issuance, no Total Maximum Daily Loads (TMDLs) have been established for any water of the U.S. that receives discharges from the City of Phoenix MS4. However, if a TMDL is established during the permit term, this permit may be reopened and modified to include the requirements of the TMDL and associated implementation plan in accordance with reopening and modification provisions in R18-9-B906 and 40 CFR 122.62.

6.3 Discharge from the MS4 to Outstanding Arizona Waters

This permit is intended to protect outstanding Arizona waters. At the time of permit issuance, no water of the U.S. receiving discharges from the MS4 has been classified as an OAW. However, if a water of the U.S that has the potential to be impacted by the MS4 discharge is classified as an OAW during the permit term, this permit may be reopened and modified, in accordance with R18-9-B906 and 40 CFR 122.62, to include additional conditions to ensure the OAW is adequately protected.

7.0 MONITORING REQUIREMENTS

7.1 Monitoring Objectives

A. To characterize stormwater quality and identify stormwater pollutants,
B. To detect and eliminate illicit discharges,
C. To evaluate the general effectiveness of specific BMPs and the SWMP as a whole, in reducing the discharge of pollutants, and
D. To estimate pollutant loads to waters of the U.S.

7.2. Dry Weather Screening

The Permittee shall continue to implement an ongoing program to monitor major outfalls (as defined in Section 10. of this permit) for illicit discharge, and field screening points if the Permittee's SWMP includes these. The program shall implement the practices and measurable goals specified in Appendix A. The Permittee shall perform outfall inspections in accordance with field screening procedures set forth at 40 CFR 122.26(d)(1)(iv)(D), and other applicable monitoring procedures.

7.3 Wet Weather Monitoring

7.3.1 Representative Storm Events

Regardless of seasonal variations, including duration, a representative storm event for the Phoenix metropolitan area shall be defined for the purposes of this permit as rainfall in the amount of 0.2 inches or more. Stormwater samples shall be collected from discharges resulting from a storm event producing 0.2 inches or more of rainfall and at least 72 hours after the previously measurable storm event (greater than 0.1 inch rainfall).

7.3.2 Storm Event Records

Each season the Permittee shall record measurable storm events (greater than 0.1 inch rainfall) occurring at each outfall specified in Table 1 of this permit until all samples required to be to be collected during the season are obtained from the outfall. The Permittee shall report this storm event data in the Annual Report, including the following information:

1. Date of each storm event;
2. Amount of rainfall (in inches) in the drainage area for each stormwater monitoring location; and
3. For those storm events producing 0.2 inches of rainfall or more, indication of whether or not a stormwater sample was collected, and if not, a brief explanation on the conditions that prevented or did not require sampling.

7.3.3 Seasonal Stormwater Sampling

The Permittee shall sample stormwater discharging from the MS4 to waters of the U.S. at the locations specified in Table 1 throughout the permit term. Stormwater samples shall be collected from the first representative storm event (as specified in Section 7.3.1) of each wet season, and subsequent representative storm events, as necessary to collect at least one stormwater sample from a representative storm event for each wet season from each monitoring location (outfall) specified in Table 1. Wet seasons, for the purposes of monitoring, shall be defined as follows:

Summer wet season:	June 1 – October 31
Winter wet season:	November 1 – May 31

Stormwater samples shall be collected at the frequencies specified in Table 2 (once each wet season; either every year or every other year of the permit, see Table 2). Sampling shall be conducted over the first six hours of the discharge, or for the entire discharge period if the discharge lasts less than six hours. The Permittee shall design stormwater sampling events to include the "first flush" (first 30 minutes of stormwater discharge) of a representative storm event whenever possible to do so.

TABLE 1
Outfall Monitoring Locations [1, 2]

Outfall ID [2]	Latitude Longitude	Monitoring Location
IB-08	33° 35' 58.5" 110° 00' 15.8"	Indian Bend Wash
SR-49 (3)	33° 23' 59.0" 111° 47' 44.2"	Salt River
SR-45	33° 25' 34.0" 111° 59' 44.0"	Salt River
SR-03 (3)	33° 24' 42.9" 111° 51' 56.2"	Salt River
SR-30 (3)	33° 24' 30.4" 112° 06' 58"	Salt River
AC-33	33° 32' 41.6" 112° 03' 16.2"	AZ Canal Diversion Channel (ACDC)
Replacement to UC03 at a location to be determined (4)		

Footnotes to Table 1

1 Outfall monitoring locations as described in the Stormwater Monitoring Program (Section 6, Table 6-1) of the *Municipal Separate Storm Sewer System, NPDES Permit No. AZS000003 Renewal Application,* dated September 14, 2001.

2 A description of each outfall monitoring location, including land uses for the drainage area is described in the Stormwater Monitoring Program (Section 6.2.1.1: Monitoring Stations) of the *Municipal Separate Storm Sewer System, NPDES Permit No. AZS000003 Renewal Application*, dated September 14, 2001.

3 At the time of permit issuance, these outfalls discharge to an impaired reach of the Salt River (Impaired for DDT metabolites, toxaphene, and chlordane in fish tissue). Monitoring for these pollutants in the stormwater discharge is required at these outfalls. *Note however, no fish tissue monitoring is required by this permit.*

4 UC03 has been removed from this permit due to lack of flow. The City is to submit the following information on a replacement monitoring location for UCO3 within 180 days of issuance of this permit. On approval by ADEQ, this permit will be amended by minor modification to add this monitoring point.

a. Name and description of receiving water
b. Outfall identification number
c. Address or physical location of the site
d. Latitude and longitude
e. Size (acres) of the drainage area
f. Land uses within the drainage area with an estimated percentage of each use
g. Type of monitoring equipment

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TABLE 2 Stormwater Monitoring		
Parameter [1, 2]	**Sampling Frequency** [4]	**Sample Type** [6]
Conventional Parameters		
Average flow rate for the sampling period [3]	Each time an outfall is sampled	———
pH	Once each wet season for each year in the permit term beginning in Summer 2009	Discrete (field analysis)
Temperature	" "	Discrete (field analysis)
Hardness	" "	Flow-proportional composite
Total Dissolved Solids (TDS) (mg/L) [2]	" "	" "
Total Suspended Solids (TSS) (mg/L) [2]	" "	" "
Biochemical Oxygen Demand (BOD) (mg/L) [2]	" "	" "
Chemical Oxygen Demand (COD) (mg/L) [2]	" "	" "
Microbiological		
Escherichia coli (*E. coli*) (CFU/100 ml or MPN) [2]	" "	Discrete
Inorganics		
Cyanide, total (ug/L) [2]	" "	Discrete
Metals (ug/L) [2, 5]		
Antimony	" "	Flow-proportional composite
Arsenic	" "	" "
Barium	" "	" "
Beryllium	" "	" "
Cadmium	" "	" "
Chromium	" "	" "
Copper	" "	" "
Lead	" "	" "
Mercury	" "	" "
Nickel	" "	" "
Selenium	" "	" "
Silver	" "	" "
Thallium	" "	" "
Zinc	" "	" "

Nutrients (mg/L) [2]		
Nitrate plus Nitrite as N	" "	Flow-proportional composite
Ammonia as N	" "	" "
Total Kjeldahl Nitrogen (TKN) as N	" "	" "
Total Phosphorus	" "	" "
Ortho-P (Total)	" "	" "
Organic Toxic Pollutants		
Total Petroleum Hydrocarbons (TPH) (mg/L)	" "	Discrete
Total Oil and Grease (mg/L) [2]	" "	Discrete
Volatile Organic Compounds (VOCs), Semi-VOCs, and Pesticides (ug/L) [2]		
Parameter [1, 2]	**Sampling Frequency [4]**	**Sample Type [6]**
Volatile Organics (ug/L) [2, 7]		
Acrolein	Once each wet season every other year of this permit beginning in Summer 2010	Discrete
Acrylonitrile	" "	" "
Benzene	" "	" "
Bromoform	" "	" "
Carbon tetrachloride	" "	" "
Chlorobenzene	" "	" "
Chlorodibromomethane	" "	" "
Chloroethane	" "	" "
2-chloroethylvinyl ether	" "	" "
Chloroform	" "	" "
Dichlorobromomethane	" "	" "
1,1-dichloroethane	" "	" "
1,2-dichloroethane	" "	" "
1,1-dichloroethylene	" "	" "
1,2-dichloropropane	" "	" "
1,3-dichloropropylene	" "	" "
Ethylbenzene	" "	" "
Methyl bromide	" "	" "
Methyl chloride	" "	" "
Methylene chloride	" "	" "
1,1,2,2-tetrachloroethane	" "	" "
Tetrachloroethylene	" "	" "
Toluene	" "	" "
1,2-trans-dichloroethylene	" "	" "
1,1,1-trichloroethane	" "	" "

1,1,2-trichloroethane	" "	" "
Trichloroethylene	" "	" "
Trimethylbenzene	" "	" "
Vinyl chloride	" "	" "
Xylene	" "	" "
Acid Compounds (ug/L) [2, 7]		
2-chlorophenol	" "	Flow-proportional composite
2,4-dichlorophenol	" "	" "
2,4-dimethylphenol	" "	" "
4,6-dinitro-o-cresol	" "	" "
2,4-dinitrophenol	" "	" "
2-nitrophenol	" "	" "
4-nitrophenol	" "	" "
p-chloro-m-cresol	" "	" "
Pentachlorophenol	" "	" "
Phenol	" "	" "
2,4,6-trichlorophenol	" "	" "
Bases/Neutrals (ug/L) [2, 7]		
Acenaphthene	" "	Flow-proportional composite
Acenaphthylene	" "	" "
Anthracene	" "	" "
Benz(a)anthracene	" "	" "
Benzo(a)pyrene	" "	" "
Benzo(b)fluoranthene	" "	" "
Benzo(g,h,i)perylene	" "	" "
Benzo(k)fluoranthene	" "	" "
Chrysene	" "	" "
Dibenzo(a,h)anthracene	" "	" "
1,2-dichlorobenzene	" "	" "
1,3-dichlorobenzene	" "	" "
1,4-dichlorobenzene	" "	" "
3,3'-dichlorobenzidine	" "	" "
Diethyl phthalate	" "	" "
Dimethyl phthalate	" "	" "
Di-n-butyl phthalate	" "	" "
2,4-dinitrotoluene	" "	" "
2,6-dinitrotoluene	" "	" "
Di-n-octyl phthalate	" "	" "
1,2-diphenylhydrazine (as azobenzene)	" "	" "
Fluroranthene	" "	" "
Fluorene	" "	" "
Hexachlorobenzene	" "	" "

Hexachlorobutadiene	" "	" "
Hexachlorocyclopentadiene	" "	" "
Hexachloroethane	" "	" "
Indeno(1,2,3-cd)pyrene	" "	" "
Isophorone	" "	" "
Naphthalene	" "	" "
Nitrobenzene	" "	" "
N-nitrosodimethylamine	" "	" "
N-nitrosodi-n-propylamine	" "	" "
N-nitrosodiphenylamine	" "	" "
Phenanthrene *	" "	" "
Pyrene	" "	" "
1,2,4-trichlorobenzene	" "	" "
PCB / Pesticides (ug/L) [2, 7]		
Aldrin	" "	Flow-proportional composite
Alpha-BHC	" "	" "
Beta-BHC	" "	" "
Gamma-BHC	" "	" "
Delta-BHC	" "	" "
Chlordane	" "	" "
4,4'-DDT	" "	" "
4,4'-DDE	" "	" "
4,4'-DDD	" "	" "
Dieldrin	" "	" "
Alpha-endosulfan	" "	" "
Beta-endosulfan	" "	" "
Endosulfan sulfate	" "	" "
Endrin	" "	" "
Endrin aldehyde	" "	" "
Heptachlor	" "	" "
Heptachlor epoxide	" "	" "
PCB-1242	" "	" "
PCB-1254	" "	" "
PCB-1221	" "	" "
PCB-1232	" "	" "
PCB-1248	" "	" "
PCB-1260	" "	" "
PCB-1016	" "	" "
Toxaphene	" "	" "

Footnotes to Table 2- continued on next page

1 The Permittee shall include any additional parameters in seasonal stormwater sampling as required by Section 6.0 of this permit (Special Conditions).

2 Analytical results shall be reported in the units specified for each category or parameter.

3 Determine the average flow rate for the sampling period (no more than 6 hours). In addition to average flow rate, the Permittee shall also record the duration of the sampling period, the volume of flow over the sampling period, and all other monitoring information as specified in Section 7.6 of this permit (Monitoring Records).

4 Sampling Frequency: The sampling frequency for conventional parameters, cyanide, nutrients, escherichia coli (*E. coli*), TPH, oil and grease, and metals is once each season for each year in the permit term at each monitoring location (outfall). The sampling frequency for VOCs, semi-VOCs, and pesticides is once each season for permit years 1 and 3 at each monitoring location (outfall). If however, the necessary VOCs, semi-VOCs, or pesticide samples cannot be obtained from an outfall or outfall(s) in years 1 or 3, the Permittee shall continue to monitor for the missing parameters in subsequent years as necessary to sample each outfall during at least two summer and two winter wet seasons during this permit term.

5 If analyzing for Total metals, the permittee shall assume a 1:1 total to dissolved ratio for purposes of reporting and comparison with surface water quality standards (SWQS) unless a site specific translator study is performed. Alternatively, the permittee may test for dissolved metals, if appropriate field filtering is completed. In this case, hardness data must also be tested and used to calculate the corresponding SWQS for certain metals as indicated by the Surface Water Quality Standards rules.

6 Sample Type: Discrete samples shall be collected manually for pH, temperature, cyanide, oil and grease, TPH, *E. coli*, and VOCs. Flow-proportional composite samples shall be collected for all other parameters specified in Table 2. A flow-proportional composite sample may be collected with a continuous sampler or as a combination of multiple discrete samples (aliquots). Only one analysis of the composite of aliquots is required. Regardless of the sample type, the Permittee shall attempt to include the "first flush" (first 30 minutes of stormwater discharge) of a representative storm event whenever possible to do so.

7 Methods: These parameters may be run using the following methods: VOCs, 624 or 8260; SVOCs, 625 or 8270; and PCB / Pesticides, 608/625 or 8081/8082 if the laboratory can pass QA with the method. In this case, the data should be marked with a T2 flag.

7.4 Assessment of Pollutant Loadings

The Permittee shall estimate the pollutant loadings each year from all identified municipal outfalls to waters of the U.S. for BOD, COD, TSS, total dissolved solids, total nitrogen, total ammonia plus total organic nitrogen (TKN), total phosphorous, and metals. An event mean concentration of each pollutant shall be estimated using representative storm event data for each year. The Permittee shall estimate the annual (total) pollutant loadings from the MS4 to receiving waters each year. Pollutant loadings and event mean concentrations may be estimated from sampling data collected at the representative monitoring locations and shall take into consideration land uses and drainage areas for the outfall. The pollutant loadings estimated each year shall be compared to previous estimates of pollutant loadings throughout this permit term. Estimates of pollutant loadings and event mean concentrations shall be included in the Annual Report and shall be accompanied by a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis, and calculation methods.

7.5 Sample Collection and Analysis

7.5.1 The Permittee is responsible for the quality and accuracy of all data required under this permit.

7.5.2 Quality Assurance (QA) Manual

The Permittee shall keep a QA Manual that describes the sample collection and analyses processes. If the Permittee collects samples or conducts sample analyses in-house, the Permittee shall develop a QA Manual that addresses these activities. If a third party collects and/or analyzes samples on behalf of the Permittee, the Permittee shall obtain a copy of the applicable QA procedures. The QA Manual shall be available for review by ADEQ/ADHS upon request. The QA Manual shall be updated as necessary, and shall describe the following:

1. Project Management, including roles and responsibilities of the participants; qualifications of persons collecting samples; purpose of sample collection; matrix to be sampled; the analytes or compounds being measured; and applicable permit-specific limits, Assessment Levels or thresholds.

2. Sample collection procedures; equipment used; the type and number of samples to be collected including QA/QC (Quality Assurance/Quality Control) samples (i.e., background samples, duplicates, and equipment or field blanks); preservatives and holding times for the samples (see methods under 40 CFR 136 or Title 9, Chapter 14, Article 6 or any condition within this permit that specifies a particular test method.)

3. Approved analytical method(s) to be used; Limits of Detection (LODs) and Limits of Quantitation (LOQs); required QC results to be reported (e.g., matrix spike recoveries, duplicate relative percent differences, blank contamination, laboratory control sample recoveries, surrogate spike recoveries, etc.) and acceptance criteria; and corrective actions to be taken by the Permittee or the laboratory as a result of problems identified during QC checks.

4. How the Permittee will perform data review; report results to ADEQ; resolve data quality issues; and identify limitations on the use of the data.

7.5.3 Sample Collection

Sample collection, preservation and handling shall be performed as described in 40 CFR 136 including the referenced Edition of *Standard Methods for the Examination of Water and Wastewater*, or by procedures referenced in A.R.S Title 9, Chapter 14 of the ADHS laboratory Licensure rules. The Permittee shall outline the proper procedures in the QA Manual, and samples taken for this permit must conform with these procedures whether collection and handling is performed directly by the Permittee or contracted to another party.

7.5.4 Analyses Requirements

1. The Permittee must use a laboratory that is licensed by the ADHS Office of Laboratory Licensure and Certification. Sample analyses conducted in the field at the time of collection (e.g., temperature, pH, etc.) may be performed by the permittee (including contractors retained by the permittee) utilizing instruments appropriate for the analyses or measurement. Field instruments must be calibrated and maintained according to the manufacturer's specifications. Where such a procedure exists, field analyses shall be conducted in accordance with procedures established in 40 CFR 136. To ensure consistency, the permittee shall prepare Standard Operating Procedures (SOPs) for all analyses conducted in the field, whether or not a procedure is established in 40 CFR 136. Copies of the SOPs

shall be included in the first Annual Report submitted to ADEQ and retained in the QA Manual.

2. The Permittee must use analytical methods specified in this permit. If no test procedure is specified, the Permittee shall analyze the pollutant using:

   a. A test procedure listed in 40 CFR 136;
   b. An alternative test procedure approved by the EPA as provided in 40 CFR 136;
   c. A test procedure listed in 40 CFR 136, with modifications allowed by EPA and approved as a method alteration by ADHS under A.A.C. R9-14-610(C); or
   d. If no test procedure for a pollutant is available under (2)(a) through (c) above, any Method in A.A.C. R9-14-612 or approved under A.A.C. R9-14-610(C) for wastewater may be used. If there is no approved wastewater method for a parameter, any other method identified in 9 A.A.C. 14, Article 6 that will achieve appropriate detection and reporting limits may be used for analyses.

3. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods.

4. The Permittee shall use an analytical method with a Limit of Quantitation (LOQ) that is lower than the water quality criteria applicable to the waters of the U.S. which receive stormwater discharges. If all methods have LOQs higher than applicable water quality criteria, the Permittee shall use the approved analytical method with the lowest LOQ.

5. The Permittee shall use a standard calibration where the lowest standard point is equal to or less than the LOQ[3].

7.6 Monitoring Records

The Permittee shall retain records of monitoring activities, including the following information applicable to the sampling event and equipment type:

1. Date and time of sampling or measurements performed;
2. Monitoring location (outfall identification);
3. Individual(s) who performed the sampling or measurements;
4. Duration of the sampling period;
5. Volume of flow during the sampling period;
6. Volume of each discrete and flow-weighted composite sample;
7. Volume of each aliquot in the flow-weighted composite sample;
8. Volume of flow at the time of collection of each aliquot;
9. Number of aliquots in the flow-weighted composite sample;
10. Time interval between collection of each aliquot (or time of collection of each aliquot);
11. Sample preservatives used;
12. Date(s) the analyses were performed;
13. Laboratory and individual(s) who performed the analyses;
14. Analytical techniques or methods used;
15. Published Method Detection Limits (MDL) of each method used, as applicable;
16. Limits of Detection (LODs) of each method used;
17. Results of such analyses;
18. Completed Chain of Custody forms;

[3] In those cases where methods utilize a single point calibration, such as 200.7 for metals, the permittee should request the laboratory to provide the lowest concentration for each analyte over which the instrument response is linear. The linear dynamic range for the method should be established as part of the required QA/QC procedures.

19. Any comments, case narrative or summary of results produced by the laboratory required to be supplied to the Permittee by the laboratory under ADHS licensure rules; and
20. Summary of data interpretation and any corrective action related to the data taken by the Permittee.

7.7 Retention of Monitoring Records

The Permittee shall retain records of all data collected, including all calibration and maintenance records for field equipment or meters operated by the permitee, copies of all reports required by this permit, and records of all data collected for a period of at least 5 years from the date of the sample, measurement or report.

7.8 Sampling Waiver

Sampling of a representative event is not required during adverse climatic conditions. Adverse climatic conditions which prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, electrical storms, etc.). Information on the conditions that prevented sampling as required by Section 7.3. of this permit shall be reported to ADEQ in the Annual Report. The Permittee shall continue to monitor subsequent storm events during the monitoring season and perform stormwater sampling of a representative storm event if another occurs during the same wet season.

7.9 Changes to the Monitoring Program by the Permittee

The Permittee may increase the number of monitoring locations, sampling frequencies, or number of monitoring parameters, specified in this permit at any time during the life of the permit without submitting a request for permit modification from ADEQ. A Permittee may also cease any additional monitoring not specified in this permit at any time without submitting a request for permit modification from ADEQ. A description of these change(s) to the monitoring program shall be included in the subsequent Annual Report required by Section 8.1 of this permit.

The Permittee shall not decrease or replace a monitoring requirement specified in this permit, including monitoring locations, sampling frequencies, or monitoring parameters, without modifying this permit. Changes to the monitoring requirements specified in this permit shall be proposed by the Permittee in writing, as a request for permit modification. A proposal for permit modification to change a monitoring requirement shall include the following information:

a. A description of the monitoring requirement to be reduced or replaced;
b. An explanation of why the monitoring requirement should be reduced or replaced;
c. A description of the proposed change to the monitoring requirement;
d. An explanation of how the proposed change will affect the monitoring program; and
e. An analysis of how the proposed change will continue to achieve the goals of the monitoring program with the reduction or replacement of the monitoring requirement.

7.10 Modification to Monitoring Program Required by ADEQ

ADEQ may require changes to the monitoring program to:

1. Assess impacts on receiving water quality caused, or contributed to, by discharges from the MS4; or
2. Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements.

Changes required by ADEQ shall be made in writing, shall set forth the time schedule for the Permittee(s) to develop the changes, and shall offer the Permittee(s) the opportunity to propose alternative changes to meet the objective of the modification. All changes required by ADEQ shall be made in accordance with R18-9-B906 and 40 CFR 122.62.

7.11 Compliance with Monitoring Requirements

The Permittee shall implement and comply with all of the monitoring requirements specified in Section 7.0 of this permit. Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained in this permit is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which includes the possibility of fines and/or imprisonment.

8.0 REPORTING REQUIREMENTS

8.1 Annual Reporting

8.1.1 All Annual Reports

The Permittee shall prepare an Annual Report summarizing the progress of the SWMP and the findings of monitoring activities for each year of the permit term. The Annual Report shall be submitted to the Stormwater & General Permits Unit, Surface Water Section each year as specified in Sections 8.5 and 8.6 which follow. The Permittee shall complete the Annual Report Form (ARF), as attached in Appendix B of this permit, consisting of the following information:

1. General Information
   Name of Permittee (legal entity); existing MS4 permit number; name, title, mailing address, telephone and fax number, and email address of the stormwater program contact person; and name, title, mailing address, telephone and fax number, and email address of the municipal or county official that is signing and certifying the renewal application.
2. Report Certification
3. Summary of Stormwater Management Program Activities (narrative)
4. Summary of Stormwater Management Program Activities (numeric)
5. Evaluation of the Stormwater Management Program
6. Stormwater Management Program Modifications
7. Monitoring Locations
8. Storm Event Records
9. Summary of Monitoring Data
10. Assessment of Monitoring Data (also see Section 8.3 of this permit - Discharge of Pollutants above a Surface Water Quality Standard)
11. Estimate of Pollutant Loadings
12. Annual Expenditures
13. Attachments

When the Permittee is unable to collect stormwater samples, as required by Section 7.3 of this permit, due to adverse climatic conditions, the Permittee shall submit in the Annual Report, in lieu of sampling data, a description of the conditions that prevented sampling, including documentation of the storm event.

8.1.2 The 4th Year Annual Report.

In addition to the information in Section 8.1.1, the 4th year submittal shall be expanded to include the following provisions. This comprehensive document shall serve as the renewal application for the permittee.

1. Receiving Waters - Identification of waters of the U.S. (including Phoenix Area canals) that may receive discharges from the MS4. Include a brief description of the designated uses of each receiving water and any known water quality impairments or total maximum daily loads (TMDLs) for the receiving water, or designation of the receiving water as a OAW resource.

2. Mapping - An up to date map or map(s) showing MS4 boundaries, receiving waters, and stormwater monitoring location(s) and the associated drainage basins.

3. Rain Gauges - Identification of the location of rain gauges in the vicinity of the monitoring locations with approximate longitude and latitude for each rain gauge.

4. Discharge Characterization Data - Summary of stormwater quality monitoring data based on all sampling results obtained during the permit term. Provide an evaluation of the quality of stormwater discharges from the MS4, including a discussion on the detection and non-detection of specific pollutants. Identify any discernable trends, improvements, or degradation of stormwater quality discharges from the MS4.

5. Pollutant Loads - Summary of the annual (or seasonal) pollutant loadings for detected pollutants in stormwater discharges from the MS4.

6. Updated SWMP - A copy of the current updated SWMP and associated attachments in Section 5.4 and Appendix C of this permit.

7. Any proposed modifications to the monitoring program - If changes are proposed to the stormwater monitoring program (such as changes to monitoring locations, parameters, or frequency), identify those and include a brief discussion on the reason(s) for modification.

8. Modifications to the Stormwater Management Program - Summary of changes made to the Stormwater Management Program during the permit term, including any addition or replacement of BMPs.

9. Proposed Modifications to the SWMP - If changes to the SWMP activities, practices, or controls are proposed for the next permit term, identify those and include a brief discussion on the reasons for modification.

10. Fiscal Analysis - Brief description of the funding sources used to support MS4 SWMP expenditures.

8.2 Non-filer Notifications

The Permittee shall notify the Department of any construction or industrial activities that are known to be occurring without AZPDES authorization to discharge stormwater associated with those activities (i.e. non-filers). Information shall be reported to the Unit Manager, Field Services Unit, Water Quality Compliance Section periodically, but at least semi-annually.

1. For construction activities that are known by the Permittee to be occurring without ADEQ's NOI authorization, for permit coverage under the AZPDES Construction General Permit, provide the project name and address, and operator name and contact information, if known. Non-filers do not include operators that have received written acknowledgment of a permit waiver certification form from ADEQ or not otherwise subject to AZPDES permitting.

2. For industrial activities that are known by the Permittee to be occurring without ADEQ's required NOI authorization for permit coverage under the MSGP, or other general or individual NPDES permit for stormwater discharges associated with industrial activity, provide the facility name and address, SIC (Standard Industrial Classification) code, business owner or operator, and contact information, if known. Non-filers do not include operators that have received written acknowledgment of a No Exposure Certification form from ADEQ or not otherwise subject to AZPDES permitting.

Notification of non-filers shall be in writing and may be submitted by mail, hand delivery, electronic submittal, e-mail or facsimile. This requirement is not considered subject to the signatory and certification requirements of Sections 9.2 and 9.12.

8.3 Discharge of a Pollutant Above a Surface Water Quality Standard

If the Permittee detects a discharge that contains a concentration of a pollutant above an applicable surface water quality standard on a recurring basis, the Permittee shall report this information in the Annual Report as required by Section 4.3 of this permit. The report shall include, at a minimum:

a. Sampling dates;
b. Monitoring location (outfall identification number);
c. Waters of the U.S. that received the discharge and surface water quality standard (SWQS) which was exceeded;
d. Outfall monitoring results (laboratory reports);
e. A description of the efforts to investigate and identify the sources of the pollutant(s), and circumstances that may have caused or contributed to high pollutant levels;
f. Proposed further actions, which may include revisions to the SWMP consisting of additional and/or alternative BMPs to reduce or eliminate, as applicable, the pollutant(s) or source(s) to the maximum extent practicable;
g. If applicable, a schedule for implementing the proposed stormwater or non-stormwater management practices or pollution controls.

8.4 Additional Reporting Requirements

The Permittee shall comply with all additional reporting requirements specified in Section 9.0 (Standard Conditions) of this permit, including the following conditions:

Planned Changes	9.13 (1)
Anticipated non-compliance	9.13 (1)
Transfers	9.13 (2)
Monitoring Reports	9.13 (3)
Compliance Schedules	9.13 (4)
24 Hour Reporting	9.13 (5)
Other Non-compliance	9.13 (6)
Other Information	9.13 (7)
Availability of Reports	9.18

8.5 Reporting Deadline

Annual reports are due on September 30th of each year.

8.6 Reporting Locations

24-hour reporting requirements specified in Section 9.13 of this permit shall be made to:

ADEQ's 24-hour hotline (602) 771-2330

ADEQ Water Quality Compliance Manager (602) 771-2209

All documents (Annual Reports, SWMPs, Renewal Application) required by this permit to be submitted to ADEQ Surface Water Section shall be directed to:

ADEQ - Surface Water Section
Stormwater & General Permits Unit
Mail Code: 5415A-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4508

All documents (AZPDES Non-filer reports) required by this permit to be submitted to ADEQ Water Quality Compliance Section shall be directed to:

ADEQ - Water Quality Compliance Section
Field Services Unit Manager
Mail Code: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4841

8.7 Signatory and Certification Requirements

All applications, reports or information submitted to ADEQ shall be signed and certified in accordance with Sections 9.12 (Signatory Requirements) of this permit, except as specifically provided in Section 8.2.

9.0 STANDARD CONDITIONS

9.1 Duty to Reapply [A.A.C. R18-9-B904(B)]
The Permittee shall submit the information required for renewal at least 180 days before this permit expires.

9.2 Signatories to Applications or Reports
[A.A.C. R18-9-A905 (A) (1) (c) incorporates by reference 40 CFR 122.22]

1. All permit applications for a municipality, State, Federal, or other public agency shall be signed by either a principal executive officer or ranking elected official.

2. Reports and Other Information
   All reports required by this permit and other information requested by ADEQ shall be signed by a person described in subsection 9.2.1 of this Section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   (a) The authorization is made in writing by a person described in 9.2.1;
   (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and,
   (c) The written authorization is submitted to ADEQ.

3. Changes to Authorization
   If an authorization under subsection 9.2.2. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of 9.2.2 of this section must be submitted to ADEQ prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification
   Any person signing a document under subsection 9.2.1 or 9.2.2 of this section shall make the following certification:
   I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

9.3 Duty to Comply
[A.A.C. R18-9-A905 (A) (3) (a) which incorporates 40 CFR 122.41(a)(i) and A.R.S. §§ 49- 262, 263.01, and 263.02]

1. The Permittee shall comply with all conditions of this permit and any standard and prohibition required under A.R.S. Title 49, Chapter 2, Article 3.1 and A.A.C. Title 18, Chapter 9, Articles 9 and 10. Any permit non-compliance constitutes a violation of the Clean Water Act; A.R.S. Title 49, Chapter 2, Article 3.1; and A.A.C. Title 18, Chapter 9,

Articles 9 and 10, and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.

2. The issuance of this permit does not waive any federal, state, county, or local regulations or permit requirements with which a person discharging under this permit is required to comply.

3. The Permittee shall comply with the effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulation that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

4. **Civil Penalties**: A.R.S. § 49-262(C) provides that any person who violates any provision of A.R.S. Title 49, Chapter 2, Article 2, 3 or 3.1 or a rule, permit, discharge limitation or order issued or adopted under A.R.S. Title 49, Chapter 2, Article 4 is subject to a civil penalty not to exceed $25,000 per day per violation.

5. **Criminal Penalties**: Any person who violates a condition of this permit, or violates a provision under A.R.S. Title 49, Chapter 2, Article 3.1, or A.A.C. Title 18, Chapter 9, Article 9 is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4, which may include the possibility of fines and/or imprisonment.

9.4 Need to Halt or Reduce Activity Not a Defense

[A.A.C. R18-9-A905 (A)(3) (a) incorporates by reference 40 CFR 122.41(c)]
It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9.5 Duty to Mitigate

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(d)]
The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

9.6 Proper Operation and Maintenance

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(e)]
The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit and the Permittee's SWMP. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

9.7 Permit Actions

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(f)]
This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

9.8 Property Rights

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(g)]
This permit does not convey any property rights of any sort, or any exclusive privilege nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, Indian tribe, or local laws or regulations.

9.9 Duty to Provide Information

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(h)]
The Permittee shall furnish to ADEQ, within a reasonable time, any information which ADEQ may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to ADEQ upon request, copies of records required to be kept by this permit.

9.10 Inspection and Entry

[A.R.S. §41-1009; A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(i)]

The Permittee shall allow ADEQ, or an authorized representative, upon the presentation of credentials and such other documents as may be required by law, to:

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the terms of this permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring or control equipment), practices or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, A.R.S. Title 49, Chapter 2, Article 3.1, and A.A.C. Title 18, Chapter 9, Article 9, any substances or parameters at any location.

9.11 Monitoring and Records

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(j)]
Refer to Section 7.0 of this permit for monitoring requirements.

9.12 Signatory Requirement

[A.A.C. R18-9-A905(A)(3)(a) incorporates by reference 40 CFR 122.41(k)]

1. All applications, reports or information submitted to ADEQ shall be signed and certified. (See 40 CFR 122.22 incorporated by reference at R18-9-A905(A)(1)(c))

2. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both for a first conviction. For a second conviction, such a person is subject to a fine of not more than $20,000 per day of violation, or imprisonment of not more than four years, or both. [Updated pursuant to the Water Quality Act of 1987]

9.13 Reporting Requirements

[A.A.C. R18-9-A905 (A) (3) (a) which incorporates 40 CFR 122.41(l)]

1. Anticipated Noncompliance
   The Permittee shall give advance notice to ADEQ of any planned changes in the permitted facility of activity which may result in noncompliance with the permit requirements.

2. Transfers (A.A.C. R18-9-B905)
   This permit is not transferable to any person except after notice to ADEQ. ADEQ may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under Arizona Revised Statutes and the Clean Water Act.

3. Monitoring Reports
   Refer to Section 8.0 of this permit for reporting requirements.

4. Compliance Schedules
   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Twenty-four Hour Reporting
   The Permittee shall orally report any noncompliance with this permit which may endanger the environment or human health within 24 hours from the time the Permittee becomes aware of the event to ADEQ 24 hour hotline at (602) 771-2330. The Permittee shall also notify the appropriate regional Water Quality Compliance Manager by phone call or voice mail by 9 a.m. on the first business day following the noncompliance. (Refer to Section 8.6 for ADEQ contact information)

   The Permittee shall also notify ADEQ Water Quality Compliance Section in writing within 5 days of the noncompliance event. The Permittee shall include in the written notification a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and, if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. Written reports shall be submitted to ADEQ Water Quality Compliance Section as specified in Section 8.6 of this permit.

6. Other Noncompliance
   The Permittee shall report all instances of noncompliance not otherwise required to be reported under this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 5 of this subsection.

7. Other Information
   Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to ADEQ, the permittee shall promptly submit such facts or information to ADEQ.

9.14 Bypass

[A.A.C. R18-9-A905 (A)(3)(a) incorporates by reference 40 CFR 122.41(m)]

1. Definitions
   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.
   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

2. Bypass not Exceeding Limitations
   The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 3 and 4 of this subsection.

3. Notice
   a. Anticipated Bypass
      If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
   b. Unanticipated Bypass
      The Permittee shall submit notice of an unanticipated bypass as required in paragraph 5 of Subsection 9.13 (24-hour Reporting).

4. Prohibition of Bypass
   a. Bypass is prohibited, and ADEQ may take enforcement action against a Permittee for a bypass, unless:

      (i) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      (ii) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and
      (iii) The Permittee submitted notices as required under paragraph 3 of this Subsection.

   b. ADEQ may approve an anticipated bypass, after considering its adverse effects, if ADEQ determines it will meet the three conditions listed above in paragraph 4.a.

9.15 Upset

[A.R.S. §§ 49-255(8) and 255.01(E), A.A.C. R18-9-A905 (A)(3)(a) incorporates by reference 40 CFR 122.41(n)]

1. Definition
   "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the Permittee. Upset does not include noncompliance to the extent that it is caused by operational error, improperly designed

treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

2. Effect of an Upset
An upset constitutes an affirmative defense to any administrative, civil or criminal enforcement action brought for noncompliance with such technology-based discharge limitations if all requirements of paragraph 3 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

3. Conditions Necessary for a Demonstration of Upset
A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   a. An upset occurred and that the Permittee can identify the specific cause of the upset;
   b. The permitted facility was being properly operated at the time of the upset; and
   c. The Permittee submitted notice of the upset as required in paragraph 13(f) (24-hour notice);
   d. The Permittee complied with any remedial measures required under 40 CFR 122.41(d); and
   e. The Permittee has taken appropriate measure including all reasonable steps to minimize or prevent any discharge or sewage sludge use or disposal that is in violation of the permit and that has a reasonable likelihood of adversely affecting human health or the environment per A.R.S. § 49-255.01(E)(1)(d).

4. Burden of Proof
In any enforcement preceding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

9.16 Reopener Clause

[A.A.C. R18-9-B906, and R18-9-A905 incorporates by reference 40 CFR 122.62]
The permit may be reopened based on newly available information; to address statutory or regulatory changes that occur during the permit term; to include conditions or limits for toxic constituents determined to be present in the discharge; to address provisions of an applicable TMDL; or to implement any EPA-approved new Arizona surface water quality standard. Per 40 CFR 122.62, when a permit is modified, only the conditions subject to modification are reopened.

9.17 Termination of Permits

[A.A.C. R-9-B906(c) and 40 CFR 122.64]
The following are causes for terminating a permit during its term, or for denying a permit renewal application:

1. Noncompliance by the Permittee with any condition of the permit;
2. The Permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time;
3. A determination by ADEQ that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
4. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit.

9.18 Availability of Reports [Pursuant to A.R.S § 49-205 and Clean Water Act Section 308] Except for data determined to be confidential under A.R.S. § 49-205(A), all records, reports or information prepared in accordance with the terms of this permit shall be made available to the public. In accordance with A.R.S. § 49-205(B) and (C), permit applications, permits, and effluent data shall be available to the public.

9.19 Removed Substances [Pursuant to Clean Water Act Section 301]
Solids, sludges, filter backwash, or other pollutants removed in the course of maintenance of the MS4 shall be disposed of in a manner that prevents any pollutant from such materials from entering waters of the U.S. This provision is not intended to prevent the legitimate reuse or recycling of such materials in an environmentally responsible manner and as described in the Permittee's SWMP.

9.20 Severability [Pursuant to A.R.S. § 49-324(E) and Clean Water Act Section 512]
The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and remainder of the permit, shall not be affected thereby.

9.21 Civil and Criminal Liability
[Pursuant to A.R.S. §§ 49-262, 263.01, and 263.02 and Clean Water Act Section 309]
Except as provided in permit conditions on "Bypass" (Section 9.14) and "Upset" (Section 11.15), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

9.22 Oil and Hazardous Substance Liability [Pursuant to Clean Water Act Section 311]
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under Section 311 of the Clean Water Act.

9.23 State or Tribal Law
[Pursuant to A.A.C. R18-9-A904(c) and Clean Water Act Section 510]
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the operator from any legal action or relieve the operator from any responsibilities, liabilities, or penalties established pursuant to any applicable State or Tribal law or regulation under authority preserved by Section 510 of the Clean Water Act.

9.24 Other Environmental Laws
No condition of this permit releases the operator from any responsibility or requirements under other environmental statutes or regulations.

10.0 DEFINITIONS

Aliquot means a portion of a discrete sample used to produce a composite sample for analysis.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, structural and nonstructural controls, operational and maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States.

Composite Sample is a combined sample that is formed by combining a series of individual, discrete samples of specific volumes at specified intervals. Composite samples characterize the quality of a stormwater discharge over a longer period of time, such as the duration of a storm event. Although, these intervals can be time-weighted or flow-weighted, this permit requires the collection of flow-proportional composite samples. This means that samples are collected and combined using aliquots in proportion to flow rather than time. Also see Flow-Proportional Composite Sample and Flow-Weighted Composite Sample.

Construction Site Means a location where construction activities (as defined in 40 CFR 122.26(b)(14)(x) and 40CFR 122.26(b)(15)) are initiated and therefore the Operator was required to obtain coverage under Arizona's Stormwater Construction General Permit.

CWA means the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500; 86 Stat.816; 33 United States Code sections 1251 through 1376), as amended. [A.R.S. § 49-201(6)]

De Minimus Discharge means a discharge that is a low flow and/or low frequency event of relatively pollutant free water which is discharged with appropriate BMPs to reduce any pollutants to below the applicable surface water quality standards (18 A.A.C. 11, Article 1). De Minimus discharges to Waters of the U.S. require permit coverage and shall not last for more than 30 days, unless approved in advance by the Department.

Department means the Arizona Department of Environmental Quality. [A.R.S. § 49-201(9)]

Director means the Director of the Arizona Department of Environmental Quality or the Director's designee.

Discharge when used without qualification, means the "discharge of a pollutant."

Discharge of a Pollutant means any addition of any "pollutant" or combination of pollutants to "waters of the U.S." from any point source.

Discrete or Grab Sample means a discrete, individual sample collected from a single location within a short period of time (usually less than 15 minutes). Analysis of grab samples characterizes the quality of a discharge at a given time of the discharge.

Field Screening Point means a location other than an outfall, within a conveyance of a MS4 where either visual observation or sampling is performed.

Flow-Proportional Composite Sample is a sample that combines discrete samples collected over time, based on the flow of the discharge being sampled. There are two methods used to collect this type of sample. One collects a constant sample volume at time intervals that vary based on stream flow. The other collects discrete samples that are proportioned into aliquots of varying volumes based on stream flow, at constant time intervals (i.e. flow-weighted composite sample).

Flow-Weighted Composite Sample means a composite sample consisting of a mixture of aliquots from discrete samples collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Illicit Connection means pipes, drains, open channels and other conveyances that have the potential to allow an illicit discharge to enter the storm sewer system, including connections made in the past, whether or not the connection was permissible at the time.

Illicit Discharge means any discharge to a MS4 that is not composed entirely of stormwater except discharges pursuant to a NPDES or AZPDES permit (other than the NPDES or AZPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities. [40 CFR 122.26(b) (2)]

Impaired Water means a water of the U.S. that has been assessed by ADEQ, under the CWA, Section 303(d), as not attaining a surface water quality standard (SWQS) for at least one designated use, and is listed in Arizona's 2004 303(d) and Other Impaired Waters List.

Large Municipal Separate Storm Sewer System means a municipal separate storm sewer that is either:

1. Located in an incorporated area with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of Census; or
2. Located in a county with an unincorporated urbanized area with a population of 250,000 or more, according to the 1990 Decennial Census by the Bureau of Census, but not a municipal separate storm sewer that is located in an incorporated place, township, or town within the county; or
3. Owned or operated by a municipality other than those described in (1) and (2) above, and that are designated by the Director under A.A.C. R18-9-A902(D)(2) as part of the large municipal separate storm sewer system. [A.A.C. R18-9-A901 (16)]

Limit of Detection or LOD means an analyte- and matrix-specific estimate of the minimum amount of a substance that an analytical process can reliably detect, which may be laboratory dependent and is developed according to Arizona Administrative Code R9-14-615(C)(7).

Limit of Quantitation or LOQ means the minimum levels, concentrations, or quantities of a target variable such as an analyte that can be reported with a specific degree of confidence.

Major Outfall means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or from its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). [40 CFR 122.26(b) (5)]

Measurable Goal means a quantitative measure of progress in implementing a component of a stormwater management program.

Medium Municipal Separate Storm Sewer System (MS4) means a municipal separate storm sewer that is either:

a. Located in an incorporated area with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census; or

b. Located in a county with an unincorporated urbanized area with a population of 100,000 or more but less than 250,000 as determined by the 1990 Decennial Census by the Bureau of the Census; or
c. Owned or operated by a municipality other than those described in subsections ~~(~~a) and (b) and that are designated by the Director under A.A.C. R18-9-A902(D)(2) as part of the medium municipal separate storm sewer system. [A.A.C. R18-9-A901 (20)]

MS4 means municipal separate storm sewer system (Also see definitions for large and medium municipal separate storm sewer systems).

Municipal Separate Storm Sewer means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):
1. Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the Clean Water Act (33 U.S.C. 1288) that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. That is not a combined sewer; and
4. That is not part of a Publicly Owned Treatment Works (POTW) as defined at A.R.S § 49-255.

Outfall means a point source (as defined by A.R.S. § 49-201) at the point where a municipal storm sewer discharges to waters of the United States, and does not include open conveyances connecting two separate municipal storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

Point Source means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged to waters of the U.S. Point source does not include return flows from irrigated agriculture or agricultural stormwater runoff. [40 CFR 122.2 & A.R.S. § 49-201(28)]

Pollutant means fluids, contaminants, toxic wastes, toxic pollutants, dredged spoil, solid waste, substances and chemicals, pesticides, herbicides, fertilizers and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge, munitions, petroleum products, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and mining, industrial, municipal and agricultural wastes or any other liquid, solid, gaseous or hazardous substances. [A.R.S. § 49-201(29)]

Practical Quantitation Limit (PQL) is the lowest concentration of the analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions [as defined in the Federal Register on July 8, 1987 (52 FR 25699)].

Sanitary Sewer Overflow (SSO) means an unintentional discharge of untreated sewage from municipal sanitary sewer systems as a result of broken pipes, equipment failure, or system overload, caused by severe weather, improper system operation and maintenance, or vandalism, including discharges from the collection system due to pipe blockages, pipe breaks, infiltration and inflow from leaky pipes, equipment failures, and insufficient system capacity (EPA Source Water Protection Practices Bulletin, July 2001).

Stormwater means stormwater runoff, snow melt runoff, and surface runoff and drainage. [A.A.C. R18-9-A901 (36)]

Stormwater Management Program (SWMP) means a comprehensive program to manage the quality of stormwater discharged from the municipal separate storm sewer system. Stormwater Management Program (or Stormwater Management Plan) is also used to refer to the written document that describes a stormwater management program.

Outstanding Water means a water of the U.S. that has been designated by ADEQ as an outstanding state resource by the Director under A.A.C. R18-11-112.

Waters of the United States (U.S.) means those waters as defined in 40 CFR 122.2.

11.0 REFERENCES

1. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2006, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

2. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2005, City of Phoenix, Arizona, NPDES Permit No. AZS000003*

3. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2004, City of Phoenix, Arizona, NPDES Permit No. AZS000003*

4. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2003, City of Phoenix, Arizona, NPDES Permit No. AZS000003*

5. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2002, City of Phoenix, Arizona, NPDES Permit No. AZS000003*

6. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2001, City of Phoenix, Arizona, NPDES Permit No. AZS000003*

7. *Municipal Separate Storm Sewer System, NPDES Permit No. AZS000003 Renewal Application*, dated September 14, 2001

8. National Pollutant Discharge Elimination System (NPDES) Permit for the City of Phoenix MS4, Permit No. AZS000003, dated February 14, 1997 (Effective March 19, 1997) and Permit Modification, dated April 15, 1998 (Effective May 23, 1998), *Expired March 19, 2002.*

9. *City of Phoenix Stormwater Management Program*, dated October 1, 1996, and revised July 11, 1997.

10. ADEQ's City of Phoenix MS4 permit file, including *EPA's Program Evaluation Report*, dated February 25, 2002, and City of Phoenix's *Response to Program Evaluation Report*, dated April 12, 2002.

11. Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted March 31, 2003.

12. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.

13. Code of Federal Regulations (CFR) Title 40, Part 122, *EPA administered permit programs: The National Pollutant Discharge Elimination System.*

14. EPA's preliminary comment letter on the City of Phoenix draft MS4 permit, May 30, 2008.

ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

FACT SHEET

This document provides pertinent information concerning the reissuance of the individual stormwater permit listed below. The City of Phoenix is the owner and operator of a Large Municipal Separate Storm Sewer System (MS4), and thus is regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) permitting program. The conditions contained in this permit are intended to maintain the Water Quality Standards listed in Arizona Administrative Code (AAC.) R18-11-101 et. seq. This permit will be issued for a period of five years.

Permittee:	City of Phoenix
Mailing Address:	Engineering and Architectural Services Department 200 West Washington Street - 7th Floor Phoenix, AZ 85003-1611
Contact Person:	Linda Palumbo Environmental Programs Coordinator (602) 495-0975
AZPDES Permit No.:	AZS000003-2008

I. BACKGROUND HISTORY

The Water Quality Act of 1987 added Section 402(p) of the Clean Water Act (CWA) which required the Environmental Protection Agency (EPA) to develop a phased approach to regulate stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) program. EPA published the final regulations on the first phase of the NPDES stormwater program on November 16, 1990. These regulations, commonly known as the Phase I stormwater regulations, established permit application requirements for discharges from municipal separate storm sewer systems (MS4s) serving a population of 100,000 or more. As defined at 40 CFR 122.26(b)(8), the term *"municipal separate storm sewer system"* refers to a conveyance, or system of conveyances (including roads with drainage systems, municipal streams, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

1. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act (33 U.S.C. 1288) that discharges to waters of the United States;
2. Designed or used for collecting of conveying stormwater; and
3. not combined sewers; or
4. part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

The Phase I stormwater regulations require an operator of a medium or large MS4 to obtain a NPDES permit for stormwater discharges from their system. A *"large MS4"* is generally defined as a system serving a population of 250,000 or more, and a *"medium MS4"* refers to system serving a population of 100,000 or more but less than 250,000. As specified in 40 CFR 122.26(b), these are

based on the population data from the 1990 Census by the U.S. Bureau of Census. EPA IX issued eight individual Phase I permits for MS4s operating in Arizona. Based on the 1990 Census, Mesa, Phoenix, Tucson, and Pima County operate large MS4s; and the Cities of Glendale, Scottsdale, and Tempe operate medium MS4s. The Arizona Department of Transportation (ADOT) was also permitted under Phase I due to the relationship (i.e. physical interconnection) of their stormwater system with the other MS4s.

On December 5, 2002, EPA granted permitting authority to the Arizona Department of Environmental Quality (ADEQ) to implement the NPDES program in Arizona, except for discharges on Indian Lands. In Arizona, the NPDES program is administered as the Arizona Pollutant Discharge Elimination System (AZPDES) program. This fact sheet provides information on the renewal of the Phase I MS4 stormwater permit to be issued to the City of Phoenix. Both the permit and this fact sheet cite federal regulations where specific regulatory language can be found. Federal definitions and other NPDES regulations have been incorporated by reference into the State AZPDES rules in the Arizona Administrative Code (A.A.C.) R18-9-A905.

II. WATER QUALITY CONCERNS

In 1987, Congress amended the Clean Water Act (CWA) to require NPDES permitting for stormwater discharges. This decision was based on growing awareness of the environmental significance of polluted stormwater runoff. EPA's report entitled *"National Water Quality Inventory, 1998 Report to Congress"* (EPA, 2000) shows stormwater runoff is one of the leading causes of existing water quality impairments. Urban runoff can harm surface water resources by changing natural hydrologic patterns, accelerating stream flows, destroying aquatic habitat, and elevating pollutant concentrations and loadings. Stormwater runoff may contain or mobilize high levels of contaminants, such as sediment, suspended solids, nutrients (phosphorous and nitrogen), heavy metals and other toxic pollutants, pathogens, toxins, oxygen-demanding substances (organic material), and floatables (EPA, 1992). These pollutants are carried into nearby streams, rivers, and lakes in stormwater runoff. Individually and combined, these pollutants degrade or impair water quality, threaten designated beneficial uses and cause habitat alteration or destruction. Uncontrolled stormwater discharges from areas of urban development and construction activity negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and humans.

A. Nationwide Urban Runoff Program

The first national assessment of urban runoff characteristics was completed for the *Nationwide Urban Runoff Program (NURP)* (EPA, 1983). The NURP study showed that stormwater runoff is a significant source of pollutants. EPA conducted the NURP study to facilitate understanding of the nature of urban runoff from residential, commercial, and industrial areas. One objective of the study was to characterize the water quality of discharges from separate storm sewer systems that drain residential, commercial, and light industrial (industrial parks) sites. The study identified 77 priority toxic pollutants in stormwater runoff discharged from residential, commercial and light industrial areas. Of these toxic pollutants, heavy metals such as copper, lead and zinc were detected most frequently and at levels of greatest concern. More recent reports have confirmed the pollutant concentration data collected in the NURP study. The highest concentrations of contaminants in stormwater are often contained in "first flush" discharges, which occur during the first major storm after an extended dry period (Schueler, T.R., 1994). In Arizona, the 2004 305(b) Water Quality Report (ADEQ, 2004) provides an assessment of the significance of stormwater discharges in Arizona. The report shows that urban runoff is a significant contributor of pollutants in Arizona.

B. Urbanization and Stormwater Runoff

Urbanization alters the natural infiltration capability of the land and generates pollutants associated with the activities of dense populations. Thus, urbanization causes an increase in the volume of stormwater runoff and the pollutant loadings in stormwater discharged to receiving

waterbodies (EPA, 1992). Urban development increases the amount of impervious surface in a watershed as farmland and other undeveloped land with natural infiltration characteristics are converted into buildings with rooftops, driveways, sidewalks, roads, and parking lots with no ability to absorb stormwater. Stormwater washes over these impervious areas picking up pollutants along the way, and gains speed and volume because it is unable to disperse and filter into the ground. As a result, stormwater flows are higher in volume, pollutants, and temperature than the flows in less impervious areas which have more natural vegetation and soil to filter the runoff (EPA, 1997). Studies reveal that the level of imperviousness in an area strongly correlates with the quality of the nearby receiving waters. In addition to increased impervious areas, urban development creates new pollution sources as population density increases and generates higher levels of car emissions, fertilizers and pesticides, litter, pet wastes, and household hazardous wastes. These pollutants can be washed into receiving waters by stormwater runoff or may be dumped directly into storm drains that discharge to receiving waters. Therefore, higher population densities and increased impervious areas generally result in a greater concentration of pollutants in stormwater discharges from municipal separate storm sewer systems.

C. Construction and Stormwater Runoff

Stormwater discharges generated during construction activities can also cause physical, chemical, and biological water quality impacts and compromise the integrity of surface waters. A primary concern at most construction sites is the erosion and transport process related to fine sediment because rain splash, rills, and sheet wash encourage the detachment and transport of this material to waterbodies. Water quality impairments can result because a number of pollutants are absorbed onto fine sediment particles. The interconnected process of erosion (detachment of the soil particles), sediment transport, and delivery is the primary pathway for introducing pollutants, such as nutrients (particularly phosphorus), metals, and organic compounds into aquatic systems. Estimates indicate that 80 percent of the phosphorus and 73 percent of the Kjeldahl nitrogen in streams is associated with eroded sediment. Although streams and rivers naturally carry sediment loads, erosion from construction sites and runoff from developed areas can elevate these loads to levels well above those in undisturbed watersheds. It is generally acknowledged that erosion rates from construction sites are much greater than from almost any other land use.

In watersheds experiencing intensive construction activity, the localized impacts of water quality may be severe because of high pollutant loads, primarily sediments. Siltation is the largest cause of impaired water quality in rivers and the third largest cause of impaired water quality in lakes (EPA, 1998). Introduction of coarse sediment (coarse sand or larger) or a large amount of fine sediment is also a concern because of the potential of filling lakes and reservoirs (along with the associated remediation costs for dredging), as well as clogging stream channels. Excess sediment can cause a number of other problems for waterbodies. Sediment is associated with increased turbidity and reduced light penetration in the water column, as well as more long-term effects associated with habitat destruction and increased difficulty in filtering drinking water. Construction sites can also generate other pollutants associated with on site wastes, such as sanitary wastes or concrete truck washout. Studies have determined that the most effective construction runoff control programs rely on local plan review and field enforcement. Stormwater discharges from construction sites are subject to regulation under the AZPDES Construction General Permit (CGP). This permit does not require the City to enforce the state permit, but does require the City to have its own ordinances and tools to control discharges from construction sites that have the potential to enter the MS4 system.

D. Non-stormwater Discharges

Discharges from municipal storm sewer systems (MS4) often include wastes and wastewater from non-stormwater sources. An *"illicit discharge"* is a discharge to a MS4 that is not composed entirely of stormwater (40 CFR 122.26(b) (2)), with some exceptions. Sources of illicit discharges include, but are not limited to: sanitary wastewater; effluent from septic tanks; car

wash, laundry, and other industrial wastewaters; improper disposal of automobile and household wastes, such as used motor oil and pesticides; and spills from roadway and other accidents. Illicit discharges enter the system through either direct connections (i.e. wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (i.e. infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, and paint or used oil dumped directly into a drain). Inflows from aging sanitary sewer collection systems are one of the most serious illicit discharge-related problems. Sanitary sewer systems frequently develop leaks and cracks, resulting in discharges of pollutants to receiving waters through separate storm sewers. These pollutants include sanitary waste and materials from sewer main construction, such as asbestos cement, brick, cast iron, vitrified clay. Municipalities have long recognized the reverse problem of stormwater infiltration into sanitary sewer collection systems. This type of infiltration often disrupts the operation of the municipal sewage treatment plant.

The improper disposal of materials is another illicit discharge-related problem that can result in contaminated discharges from separate storm sewer systems in two ways. First, materials released on the ground may either drain directly to a storm sewer or be washed into a storm sewer during a storm event. The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses and bacteria into receiving waterbodies. Second, materials may be released directly to a catch basin or other stormwater conveyance. Improper disposal of materials to catch basins and other storm sewer inlets often occurs when people mistakenly assume that materials discharged to a catch basin will reach a municipal wastewater treatment plant. Materials that are commonly disposed improperly include used motor oil; household toxic materials; radiator fluids; and litter, such as disposable cups, cans, and fast food packages. The NURP study discussed earlier found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health. EPA believes that there has been increasing success in addressing these problems through initiatives, such as storm drain stenciling and recycling programs, including household hazardous waste special collection days.

III. STATUS OF THE PERMIT

EPA Region 9 issued the Phase I MS4 stormwater permit to the City of Phoenix on February 14, 1997. The permit was modified in April 1998 to include the requirement for estimating pollutant load reductions to receiving waters, as expected from the implementation of the City's stormwater management program. In September 2001, the City submitted information to EPA Region 9 for renewal of their MS4 permit. The stormwater permit for the City of Phoenix MS4 expired on March 19, 2002. The permit has remained administratively continued until the new permit is issued, in accordance with A.A.C. R18-9-B904(C).

This permit replaces the City of Phoenix MS4 Stormwater Permit issued by EPA Region 9 in February 1997. Development of this permit consisted of a review of the City's 1997 MS4 permit (AZS000003) and associated fact sheet, the City's stormwater management program documents and annual reports, EPA's *Program Evaluation Report* (February 2002), and other reference materials as appropriate, such as other MS4 permits and EPA guidance documents. Maintaining compliance with the original MS4 permit required the City to control pollutants in stormwater discharges from the MS4, primarily through the implementation of the practices described in the City's stormwater management program (SWMP). The City's stormwater program was first evaluated by EPA Region 9 at the time of permit application in the early 1990's. A revised version of the City's SWMP, dated October 1996, was approved for implementation at the time of permit issuance in 1997.

EPA Program Evaluation Report (2002)

In October 2001, Tetra Tech, Inc. and EPA Region 9 conducted an audit of the City's stormwater program to evaluate program effectiveness, assess permit compliance, and gather information for permit renewal. The findings of the audit were documented in EPA's *Program Evaluation Report*,

dated February 2002. The evaluation report identified stormwater program deficiencies and specific areas of concern to be addressed for successful program implementation. The following program deficiencies were identified:

1. SWMP and permit do not include measurable elements to quantify and track progress
2. Stormwater program lacks resources to meet permit requirements in a timely manner
3. Lack of practices for controlling pollutants from road and infrastructure projects
4. Failure to file a NOI for the 19th Avenue road project (101 loop to Deer Valley)
5. Lack of ongoing maintenance of erosion and sediment controls at construction sites
6. Lack of knowledge of stormwater general permit conditions (inspectors)
7. Failure to eliminate illicit discharges in a timely manner
8. Lack of criteria by which to determine whether "conditional" non-stormwater discharges are sources of pollutants
9. Lack of cost recovery mechanism for non-stormwater releases to the storm drain system
10. Limited interdepartmental coordination
11. Public survey results showing decreasing stormwater awareness
12. Limited monitoring data

In April 2002, the City submitted additional information (*Response to Program Evaluation Report*) to EPA to address the concerns identified in the evaluation report. ADEQ referred to both EPA's Program Evaluation Report and the City's response to the evaluation report while developing permit conditions. While ADEQ believes that the City has implemented practices to address many of the stated concerns, the permit has been drafted to clarify all stormwater program requirements regardless of their status of implementation or compliance.

The specific measurable goals of this permit are included in Appendix A of this permit. These, and the monitoring provisions in the permit, address most of the topics identified in the audit above. For example, there are specific provisions for increased training of staff, inspectors, and for employees working on road and infrastructure projects.

As indicated in EPA's evaluation report, recovering the costs of illicit discharges is not a permit requirement, and cost recovery is not a condition of this permit. However, a mechanism for cost recovery may be necessary to eliminate illicit discharges in a timely manner as required by this permit. As such, the City of Phoenix has included a cost recovery mechanism for illegal discharges and spills in their Stormwater Ordinance (Phoenix City Code, Chapter 32 C).

For illicit discharges, the permit requires the City to enforce their stormwater ordinance (or other illicit discharge ordinance) to prohibit and eliminate illicit discharges to the storm sewer system, including prohibiting cross connections between sanitary sewer system and storm sewer system and other illicit connections to the storm sewer system, and improper disposal (illegal dumping) of wastes, toxic chemicals, and other non-stormwater discharges into the storm sewer system. There are also defined timelines for eliminating illicit discharges in accordance with the City's enforcement response policy.

This permit includes requirements for maintaining interdepartmental coordination, including identification and inventory of municipal facilities, prioritizing these for inspection and determining if appropriate BMPs and needed permits are in place, as applicable. It also requires standard procedures and practices be in place to properly handle hazardous materials and used oils. The permit also requires Hazardous Materials Management Procedures (HMMP) be readily available at all City facilities. A committee is to review the HMMP every two years, and revise as necessary. The permit requires this review committee include a person with stormwater expertise to provide feedback on stormwater concerns.

EPA Program Evaluation Follow Up (2008)

In August 2008, EPA Region 9 conducted a follow up to the 2001 audit. The 2008 evaluation was not a comprehensive program evaluation, but rather focused on areas of program deficiencies identified in the 2001 audit, namely the control of pollutants from industrial and commercial sources and the detection and elimination of illicit discharges. EPA's findings generally determined the City had not fully addressed the deficiencies identified in the 2001 audit. When preparing the draft permit, the Department relied, in part on the results of the 2001 audit and took into consideration the identified deficiencies to promote the City's program.

The EPA's 2008 audit is documented in the *Phoenix Area Municipal Separate Storm Sewer System (MS4) Compliance Interviews, Industrial and Commercial Program Interviews, City of Tempe, City of Mesa, City of Glendale, City of Scottsdale, City of Phoenix* (October 2008).

Low Impact Development Control of Pollutants from New Development & Significant Redevelopment

In April 2007, U.S. EPA entered into an agreement with several national organizations to promote green infrastructure /Low Impact Development (LID) to improve stormwater quality management for MS4s. In January 2008, EPA published an action strategy for the new initiative (see *Reducing Stormwater Costs through Low Impact Development Strategies and Practices on the EPA website*) LID are approaches and practices designed to reduce runoff of water and pollutants from the site at which they are generated, by means of infiltration, evapotranspiration, and reuse of rainwater. LID techniques manage water and water pollutants at the source and thereby prevent or reduce the impact of development on rivers, streams, lakes, and ground water.

EPA has found that in most cases implementing well-chosen LID practices saves money for developers, property owners, and communities while protecting and restoring water quality. It is also found that communities may experience amenities and associated economic benefits that go beyond cost savings. These include enhanced property values, improved habitat, aesthetic amenities, and improved quality of life. For more information about LID, see www.epa.gov/npdes/greeninfrastructure and www.epa.gov/npdes/lid. For these reasons, EPA is encouraging the increasing use of LID practices, including incorporating LID provisions in NPDES permits. ADEQ has responded by incorporating some LID provisions in this permit.

The City of Phoenix actively supports features in the community such as parks and open space, riparian restoration projects (i.e., Rio Salado), constructed wetlands for flood protection and habitat restoration (i.e., Tres Rios), green building for municipal facilities (i.e., LEED standards), onsite retention standards, and other rainwater harvesting features. In addition, The City of Phoenix has a municipal code that requires most new development to provide on-site retention for a 100 year, 2 hour storm event. This practice is consistent with LID policies, and therefore has been cited as a permit provision in Appendix C. An additional LID condition requires the City to evaluate the potential for incorporating additional Low Impact Development (LID) practices into the City's site planning and development processes.

Status of Other Program Areas

One area of the stormwater program that was not fully evaluated by EPA in 2001 was the City's monitoring program. However, limited monitoring data was identified as an area of concern in the evaluation report. To maintain compliance with the 1997 permit, the City conducted stormwater monitoring and submitted annual status reports, including monitoring results, throughout the permit term. ADEQ evaluated the City's monitoring program during development of this permit and specific monitoring provisions have been added.

Another element of the program that was not evaluated in the 2001 evaluation was the City's legal authority to implement and enforce the program. This requirement was evaluated during development of the 1997 permit and requirements for maintaining legal authority are included in this permit.

IV. PROPOSED PERMIT CHANGES

This permit is significantly different from the 1997 permit, both in format and level of detail. The 1997 permit is relatively brief (3 pages plus definitions) and very general in describing permit conditions. The general nature makes it difficult, for both the permittee and ADEQ, to clearly understand the enforceable requirements of this permit. Thus, this permit has been written to include and expand on specific permit conditions and clarify reporting information.

Specifically, this permit includes "measurable goals" or program standards for measuring the progress of the stormwater management program, one of the areas of concern identified in EPA's evaluation report in 2002. The City has been tracking the progress of program activities throughout the permit term and has been providing the status of these activities to ADEQ in annual reports. While tracking program activities is essential for reporting the accomplishments and progress of the City each year, it does not ensure successful program implementation. Instead, specific goals, objectives, or program standards have been established to identify the direction or target for the stormwater program. Such objectives are considered necessary to establish an effective level or degree of implementation of a specific stormwater practice, such as the frequency or amount of an activity. Without measurable objectives, neither the City nor ADEQ can evaluate the success of the program or assess compliance with permit conditions. Therefore, program standards for successful program implementation have been included in the permit in Appendix A.

V. SUMMARY OF PERMIT CONDITIONS

A. Applicability

The 1990 Census estimated the population of the City of Phoenix at approximately 983,000, thus establishing the City as an operator of a large municipal separate storm sewer system under the Phase I stormwater regulations. In 2000, the City's population was estimated at 1,321,000. This permit applies to discharges from the storm sewer system within the corporate boundaries of the City, including any annexations to the City that occur during the life of the permit.

B. Receiving Waters

This permit authorizes stormwater discharges from the City's MS4 to waters of the U.S. The City of Phoenix discharges stormwater (and non-stormwater) to waters of the U.S., including the Salt River, Indian Bend Wash, and Cave Creek Wash. The Salt River receives stormwater discharges from the Indian Bend Wash and storm drains draining the southern portion of the City.

The City also discharges to man-made distribution systems, which are owned and operated by other non-MS4 entities. These systems include the Grand Canal, Arizona Canal, Arizona Canal Diversion Channel (ACDC), Cross Cut Canal, Old Cross Cut Canal, and the Papago Diversion Channel. The Papago Diversion Channel, the Grand Canal (which receives flows from the Cross Cut and Old Cross Cut Canals), and the Arizona Canals (including the ACDC) receive stormwater from the central part of the City and drain to either Skunk Creek or New River, both which are tributary to the Agua Fria River. The ACDC receives stormwater runoff from the northern part of the City, including Cave Creek Wash, and directs it to Skunk Creek, which drains into the Agua Fria River. The Agua Fria River discharges to the Salt River approximately 10 miles west of Phoenix. These man-made distribution systems are either designated waters of the U.S. or are conveyances to a water of the U.S. In addition, the Phoenix Area Canals (Grand Canal, Arizona Canal, ACDC, Cross Cut Canal, and Old Cross Cut Canal) have designated uses and Arizona water quality standards.

Arizona Water Quality Standards that apply to the surface waters receiving discharges from the City of Phoenix are specified in A.A.C. Title 18, Chapter 11, Article 1. None of the City's receiving waters are identified as *"outstanding Arizona waters"* under A.A.C. R-18-11-112. Therefore, the City of Phoenix does not discharge to any outstanding Arizona surface water.

However, the City discharges to an impaired segment of the Salt River based on Arizona's 2006/2008, 303(d) and Other Impaired Waters List (i.e. at least one designated use was assessed as impaired). The segment of the Salt River reaching from the 23rd Avenue WWTP to the Gila River is listed as impaired for DDT metabolites, toxaphene and chlordane in fish tissue. These pollutants of concern are banned pesticides that may still be present in sediments and are generally attributed to past agricultural land use. No total maximum daily load (TMDL) or associated load allocation has been established for this reach of the Salt River at this time. As of the 2006/2008, 303(d) list, no other surface water receiving discharges from the City of Phoenix has been identified as impaired.

C. Discharges

This permit authorizes stormwater discharges to waters of the U.S. from all outfalls within the City of Phoenix MS4. The City's MS4 includes approximately 500 outfalls. The City discharges stormwater runoff from residential, commercial, and industrial land uses, and open space (undeveloped areas) to both natural receiving waters and man-made canals. Other discharges from the City's MS4 include non-stormwater discharges. Non-stormwater discharges fall under two categories: "conditional" non-stormwater discharges listed at 40 CFR 122.26(d) (2) (iv) (B) (1) and illicit discharges. Non-stormwater discharges to the MS4 must be prohibited by the City, except for the "conditional" non-stormwater discharges that must either be permitted under another AZPDES permit (such as the De Minimus General Permit). Therefore, non-stormwater discharges are not authorized under this permit. Illicit discharges (i.e. all other non-stormwater discharges) are prohibited by this permit and must be investigated and eliminated upon detection. Specific permit conditions addressing non-stormwater discharges and illicit discharges are included in Appendix A of this permit.

D. Legal Authority (Section 2.0 of this permit)

Conditions for the City to establish the legal authority to carry out the permit requirements are specified in Section 2.0 of this permit. This permit requires the City to establish and otherwise maintain the legal authority to carry out the terms and conditions of this permit to control the discharge of pollutants to and from the MS4. The Phase I stormwater regulations (40 CFR 122.26(d)(2)(i)) specify that legal authority must, at a minimum, authorize the City to:

1. Control the contribution of pollutants to the MS4 by stormwater discharges associated with industrial activities and the quality of stormwater discharged from industrial facilities;

2. Control the contribution of pollutants to the MS4 by stormwater discharges associated with construction activities and the quality of stormwater discharged from construction sites;

3. Prohibit illicit connections and discharges to the MS4;

4. Control discharges to the MS4 from spills, dumping, or improper disposal of materials other than stormwater;

5. Require compliance with conditions in ordinances, permits, contracts or orders;

6. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with ordinances, permit conditions, and other requirements to control the discharge of pollutants to the MS4, and

7. Establish requirements for post-construction stormwater controls.

Additionally, to emphasize the responsibility for discharges from construction sites (*note: large construction sites are technically encompassed by #1 above; this provision also requires construction sites over 1 acre to be monitored*). As such, permit provision 2.2 specifies the permittee must have authority to control the contribution of pollutants to the MS4 by stormwater

discharges associated with construction activity and the quality of stormwater discharged from construction sites.

In November 1992, the City adopted an ordinance specifically to control storm sewer system pollution. The City has also adopted ordinances to control pollutants in stormwater runoff from construction sites and new development. All ordinances demonstrating the City's legal authority to control pollutants in stormwater discharges and non-stormwater discharges are to be submitted to ADEQ with the revised SWMP due 1 year from the effective date of the permit.

E. Limitations of Coverage (Section 3.0 of this permit)
Discharges that are not authorized by this permit include the following:

1. Stormwater discharges associated with industrial activities (40 CFR 122.26(b) (14) (i)-(ix) and (xi), which are to be permitted under a AZPDES stormwater permit for industrial activity;

Note: Facilities that are permitted are not necessarily prohibited from discharge through the MS4 system, however, those specific discharges are not authorized by THIS permit and coverage under the MSGP or another AZPDES permit must be obtained.

2. Stormwater discharges associated with construction activity (40 CFR 122.26(b) (14) (x) or 40 CFR 122.26(b) (15), which are to be permitted under the AZPDES Construction General Permit;

Note: Sites that are permitted are not necessarily prohibited from discharge through the MS4 system, however, such discharges are not authorized by THIS permit and coverage under the Construction CGP must be obtained.

3. Non-stormwater discharges; including De Minimus discharges.

Note: Deminimus discharges are *not necessarily prohibited from discharge through the MS4 system, however, such discharges are not authorized by THIS permit and coverage under the Deminimus permit or another permit must be obtained.*

4. Stormwater discharges mixed with non-stormwater, unless the non-stormwater discharges comply with a separate AZPDES permit;

5. Discharges to impaired receiving waters identified on Arizona's 2006/2008, 303(d) and Other Impaired Waters List, except as specified in the special conditions of the permit;

6. Discharges to outstanding Arizona waters identified in A.A.C. R18-11-112, except as specified in the special conditions of the permit; and

F. Surface Water Quality Standards (Section 4.0 of this permit)
The City is required to protect water quality by ensuring, to the maximum extent practicable, that no discharge causes or contributes to an exceedance of any water quality standard applicable to a surface water receiving discharges from the MS4. To do so, the City is to fully implement and maintain the provisions of their Stormwater Management Program (SWMP) and all other requirements of this permit.

The City is also required to modify the SWMP during the life of the permit as necessary to improve the effectiveness of the program in attaining water quality standards and reducing the discharge of pollutants from the MS4. A discharge with pollutants higher than the applicable water quality standard is to be reported in the Annual Report, along with a description of the circumstances that may have caused or contributed to the exceedance. For exceedences

reoccurring at an outfall, the permit requires the City to take feasible actions to reduce the discharge of that pollutant.

Antidegradation
Antidegradation rules exist under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. The City is required to maintain stormwater and non-stormwater management practices that minimize the discharge of pollutants to the maximum extent practicable and ensure that no degradation of receiving waters will occur from MS4 discharges.

The permit contains discharge limitations and SWMP requirements to minimize the discharge of pollutants to receiving waters. Monitoring conditions are specified in this permit to characterize stormwater quality, assess impacts of stormwater on water quality, evaluate the effectiveness of specific BMPs in minimizing the discharge of pollutants, and to estimate pollutant loads to receiving waters. As long as the City maintains consistent compliance with the provisions of this permit, the designated uses of the receiving waters will be presumed protected, and the City will be deemed to meet currently applicable antidegradation requirements under A.A.C. R18-11-107.C.

G. Stormwater Management Program (Section 5.0 and Appendix C of this permit)
Conditions for developing and implementing a Stormwater Management Program (SWMP) are specified in Section 5.0 and Appendix C of this permit. The goal of this permit and the SWMP is to minimize the pollutants in stormwater discharges to the MS4 system, and discharges from the MS4 to the maximum extent practicable (MEP). MEP is the technology-related level of control for pollutants in stormwater discharges from a MS4 as specified in the 1987 amendments to the Clean Water Act. The approach to managing stormwater discharges from a MS4 includes a Stormwater Management Program (SWMP). The SWMP is a comprehensive plan for controlling pollutants in stormwater runoff from the MS4, and the means, along with the other conditions in the permit, by which a municipality complies with the MEP standard.

1. Stormwater Management Program Components

   The Phase I stormwater regulations (40 CFR 122.26(d) (2)(iv)) identified the following general components of a SWMP:

   A. Measures to reduce pollutants from commercial and residential areas;
   B. Measures to control illicit connections and illegal dumping to the storm sewer system;
   C. Measures to reduce pollutants from industrial facilities; and
   D. Measures to reduce pollutants from construction sites.

   The Phase I regulations on SWMP requirements are specified in 40 CFR 122.26(d) and are incorporated by reference into the state rules.

   Measures to reduce pollutants in municipal stormwater discharges and to control illicit non-stormwater discharges include a combination of structural and nonstructural controls, or best management practices (BMPs). Nonstructural controls include practices such as public awareness programs, recycling programs, catch basin cleaning, street sweeping, programs to control illegal dumping, and various source controls. Structural controls include infiltration basins and other retention and detention structures.

2. City of Phoenix Stormwater Program
   Operators of large and medium MS4s in Arizona developed a SWMP in the early 1990s as part of their initial stormwater permit application. The SWMPs were submitted to EPA Region 9 for review in 1992 (large MS4s) and 1993 (medium MS4s). The City of Phoenix revised their SWMP following EPA's review and the final SWMP, dated October 1, 1996,

was approved for permit issuance. While the City's MS4 permit expired in 2002, the permit has been administratively continued and the City was required to implement and maintain the approved SWMP.

Similar to the 1997 permit, this permit requires the City to continue to implement and maintain a SWMP to limit the discharge of pollutants to and from the MS4, to the maximum extent practicable. In this permit, specific activities or BMPs have been written into the permit rather than referenced in the separate SWMP document. However, the SWMP is to be updated as necessary to conform with this permit, and is to be resubmitted on or before the first anniversary of the effective date of this permit.

3. Common Stormwater Practices
Phase I MS4s have gained nearly 15 years of experience in implementing stormwater management programs and now maintain many of the same types of activities or BMPs. In particular, Phase I stormwater management programs have evolved over the last decade and generally consist of common types of stormwater management practices. While these activities and practices are based on the City of Phoenix SWMP, they are consistent with and similar to, other MS4s both in Arizona and across the country.

This permit also establishes the goal or direction for many BMPs to progress (i.e., measurable goals). This permit requires the City to implement or otherwise maintain the practices listed in the permit and, as a minimum, meet the associated frequencies, amounts, time frames, and other specified program standards.

4. Stormwater Management Program Updates
The City is required to modify the SWMP as necessary to comply with the provisions of this permit. An updated program must be submitted to ADEQ for review within 1 year of permit issuance. The updated program will replace the original 1996 SWMP and related documents. Appendix C of this permit describes the minimum required content and level of detail for the written SWMP. Appendix C was developed so that the SWMP includes at least these areas.

Part 8.1.2 also requires the City to provide a current and updated SWMP with the 4th year annual report, along with information about receiving waters, drainage areas, mapping, discharge characterizations, and other information to allow a comprehensive review of the program.

5. Stormwater Management Program Modification
The City is required to modify the SWMP as necessary to improve the effectiveness of the program in reducing the discharge of pollutants to and from the MS4. This permit specifies conditions for modifying the SWMP during the life of the permit. The permittee can add new practices, temporary or experimental BMPs, or controls to the SWMP or increase the amount, frequency or other quantity of an existing practice at any time; such changes are to be described in the subsequent Annual Report. Modifications to replace an ineffective practice with an alternate practice may be implemented with prior ADEQ approval by demonstrating that the stormwater management program will continue to achieve an equivalent reduction in pollutants, and will not cause or contribute to a violation of any applicable water quality standard. Any modification to discontinue an existing practice or control, or decrease a program standard, including an amount, frequency, or time frame may not be implemented without modification of the permit. Such changes require a request for permit modification, accompanied with a demonstration of how the stormwater management program will continue to achieve at least an equivalent reduction in pollutants.

6. Summary of Changes to SWMP Conditions
   - Added measurable goals for program implementation (Appendix A)

- Added requirements for program content and organization (Appendix C)
- Added program modification requirements

H. Special Conditions (Section 6.0 of this Permit)

1. Outstanding Arizona Waters
This permit is intended to protect outstanding Arizona waters within the State of Arizona. A *"outstanding Arizona water"* is a surface water that has been identified by ADEQ as an outstanding water resource in accordance with A.A.C. R18-11-112.

At the time of permit issuance, none of the surface waters receiving discharges from the City of Phoenix MS4 have been classified as an outstanding Arizona water. Therefore, any conditions in this permit for discharging to an outstanding Arizona water are not applicable to the City at this time. However, if a surface water within the proximity of the City of Phoenix is classified as an outstanding Arizona water during the permit term, this permit may be reopened and modified to include additional conditions to ensure that no degradation of the outstanding Arizona water will occur.

2. Impaired Waters
This permit is also intended to protect impaired waters within the State of Arizona and includes specific conditions for discharging to these waters. An "impaired water" is a surface water that has been assessed as not attaining a water quality standard for at least one designated use. Impaired waters are listed in Arizona's 2006/2008, 303(d) and Other Impaired Waters List available at www.azdeq.gov/environ/water/assessment/assess.html.

The City of Phoenix discharges to the Salt River in an impaired segment, and therefore, permit conditions for discharging to an impaired water apply. This permit requires the City to implement management practices and pollution controls to minimize the discharge of listed pollutant(s) to any impaired water, including the Salt River. The pollutants of concern associated with the Salt River at the discharge location are banned pesticides (DDT metabolites, toxaphene and chlordane in fish tissue). These pollutants of concern are historically used pesticides generally attributed to past agricultural practices. Their contribution to stormwater would be minimized particularly by implementing effective BMPs that address soil erosion and sediment, the vehicle for transport of these pollutants, from contributing areas.

In accordance with the 1997 permit, the City of Phoenix has implemented management practices to minimize erosion on construction sites and reduce sediment in stormwater runoff. These practices include the development of BMP standards, adoption of a stormwater ordinance to address construction activity, site plan reviews, issuance of stormwater management permits for construction activity, site inspections, and operator education. Other controls or practices may be necessary to minimize the discharge of listed pesticides to the Salt River. The City is encouraged to implement additional requirements in the SWMP for construction projects located near these sensitive receiving waters to further reduce the discharge of sediments and other pollutants.

In addition to implementing specific BMPs to protect impaired waters, this permit requires the City to include listed pollutant(s) in the stormwater monitoring of the outfall(s) discharging to the impaired water. Monitoring for these pollutants is to be performed throughout the permit term to assess the contribution of listed pollutants from the MS4 and to evaluate the effectiveness of BMPs in minimizing the discharge of these pollutants. At the time of permit development, no Total Maximum Daily Loads (TMDLs) have been established for the Salt River or other surface waters receiving discharges from the City of Phoenix MS4. If a TMDL is established during the permit term, this permit may be reopened and modified to include the requirements of the TMDL and associated implementation plan.

I. Monitoring Requirements (Section 7.0 of this permit)
Monitoring conditions are specified in Section 7.0 of this permit and were developed to meet the following objectives:

- To characterize stormwater quality and identify stormwater pollutants;
- To detect and eliminate illicit discharges;
- To evaluate the effectiveness of specific BMPs and the SWMP as a whole, in minimizing the discharge of pollutants; and
- To estimate pollutant loads to waters of the United States receiving discharges.

1. Dry Weather Monitoring
Monitoring requirements in this permit include both dry weather inspection of stormwater outfalls to detect illicit discharges and wet weather stormwater sampling of representative outfalls. The City has been performing dry weather inspections of outfalls since the original permit was issued in 1997. This permit requires the City to continue to inspect outfalls to detect illicit discharges. In 2006, the City identified approximately 500 major outfalls from the MS4. This permit requires the City to inspect at least 20% of these outfalls each year.

Dry weather monitoring of outfalls is a required practice of the Stormwater Management Program and conditions for maintaining this practice are addressed in Appendix A.

2. Wet Weather Monitoring
In addition to dry weather monitoring, this permit requires the City to conduct stormwater sampling throughout the permit term.

Monitoring Locations: The City has been conducting stormwater sampling at designated outfalls since 1997. The monitoring locations in the 1997 permit were established based on land uses. The City identified seven outfalls that represented drainage areas from industrial, residential, commercial and undeveloped land. These monitoring locations were re-evaluated for this permit to verify that each outfall discharges to a water of the U.S. Due to changes in land use that have resulted in little to no flow from Outfall Number UC03, the City is no longer required to monitor this location as part of this permit. The City is, however, required to identify and implement monitoring at a replacement outfall. The City must identify the replacement outfall within 180 days of permit issuance.

Monitoring Parameters: The monitoring parameters in the City's current monitoring program were based on stormwater sampling conducted in the early 1990s at the time of permit application. The monitoring parameters in the 1997 program includes metals, nutrients, bacteria (fecal coliform and strep) total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), Semi-VOCs, and pesticides. In 2001, the City proposed a reduction in monitoring parameters based on the monitoring results for 16 storm events sampled during the initial permit term. The proposed exclusions to monitoring consisted of constituents consistently found at concentrations at or below the detection limits, including VOCs, semi-VOCs, and pesticides. In addition, the City proposed excluding bacteria from stormwater monitoring based on consistently high monitoring results that were above measurable ranges of the analytical method. The monitoring program proposed by the City in 2001 includes trace metals, nutrients, and organics detected during the initial permit term and other constituents of concern in urban runoff (i.e. TPH).

In developing the monitoring conditions for this permit, ADEQ considered various monitoring programs, including the reduced monitoring proposed by the City of Phoenix. In 2002, EPA identified limited monitoring data as an area of concern in the City's stormwater program; however, the problem of limited data on stormwater quality extends to all Phase I MS4s in Arizona. Stormwater monitoring data has been limited for a variety of reasons, including

drought, intensity and duration of storm events, seasonal variations in rainfall patterns, failed monitoring equipment, lack of staff, and safety concerns. Therefore, in a continuing effort to characterize stormwater quality in Arizona, ADEQ identified a specific list of stormwater monitoring parameters, including all priority pollutants, for inclusion in the renewal Phase I MS4 permits. The revised strategy is intended to provide an updated picture of pollutants currently being discharged, maintain consistency in monitoring requirements, and allow a standardized and comparable dataset of MS4 discharge data.

As such, this permit includes seasonal stormwater monitoring for conventional parameters, including Total Dissolved Solids (TDS) and Suspended Sediment Concentration (SSC), Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD); nutrients, including nitrogen and phosphorus compounds; total metals, *Escherichia coli* (*E. coli*); and several organic compounds, including TPH, and oil and grease. In addition, this permit requires monitoring of other priority pollutants (VOCs, semi-VOCs, and pesticides) at least four times in the permit term to assess the presence of these pollutants. Several studies have detected other gasoline-related VOCs in stormwater discharges, including trimethylbenzene and xylene. As such, these pollutants are included in the monitoring parameters in this permit. While trimethylbenzene, and xylene are not certified analytes under the standard method for VOCs (i.e. method 624), these parameters may be easily included in the VOC analysis for the purpose of assessing their presence in stormwater discharges.

Sample Types: This permit requires collection of both discrete and flow-proportional composite samples of stormwater discharges. Discrete samples are required for pH, temperature, cyanide, oil and grease, TPH, benzoic acid, *E. coli*, and VOCs. Flow-proportional composite samples are to be collected for all other parameters specified in Table 2 of the permit. Flow-proportional composite samples may be collected with a continuous sampler or as a combination of multiple discrete samples (aliquots). Sampling is to be conducted over the first 3-6 hours of the discharge, or for the entire discharge period if the discharge lasts less than 3 hours. Only one analysis of the composite of aliquots is required. Regardless of the sample type, the City is to design sampling events to include the "first discharge" (first 30 minutes of stormwater discharge) of a representative storm event whenever possible to do so.

Representative Storms: Stormwater sampling required under the permit is designed to be conducted for representative storm events. As described at 40 CFR 122.21(g)(7)(ii), this is a storm event of greater than 0.1 inch of rainfall and at least 72 hours after the previously measurable (greater than 0.1 inch rainfall) storm event. Where feasible, the variance in the duration of the event and the total rainfall of the event should not exceed fifty percent of the average or median rainfall event in the area. Each of the MS4s located in Maricopa County, including Glendale, Mesa, Phoenix, Scottsdale, and Tempe, used historical rainfall data from Phoenix Sky Harbor Airport to determine the duration and volume of a representative storm event for the region. However, the number of years used to determine average storm conditions varied across MS4s from 33-47 years, and each of the MS4s generally determined that a summer representative storm varied in volume from 0.2 inches to 0.8 inches and in duration from 2.2 hours – 7.2 hours. A winter representative storm was determined to range in volume from 0.2 inches to 0.7 inches with a duration of 5.1 hours to 17.7 hours.

The varying determination of a 'representative' storm, combined with drought conditions over the last decade, resulted in limited opportunities for MS4s to collect an adequate number of samples to assess stormwater quality or comply with the terms of the 1997 permit. In 2002, EPA identified the duration of a representative storm event (i.e. high range of duration) as limiting sampling opportunities for the City of Phoenix. The City re-evaluated their definition of a representative storm by first comparing rainfall data from Sky Harbor Airport to five other

locations within the city. No significant differences in rainfall patterns were found between locations, thereby verifying that the airport rainfall data was representative of storm events for the City. However, the period of rainfall events used to redefine a representative storm was reduced to 25 years, which resulted in an increased number of representative stormwater events for possible sampling. In addition, the City of Mesa and the City of Tempe both revised their definitions of a representative storm in 2001 by eliminating the duration of a storm as a basis for their definitions. Therefore, representative storms are determined based on volumes only, which increases the number of storm events by including those that may have been previously omitted due to duration.

However, MS4s in Maricopa County still vary in the volume of rainfall that is representative of a storm event for their area. The minimum volume of rainfall representative of a storm in the summer wet season varies across these MS4s from 0.2 inches to 0.27 inches, with one city using the baseline minimum volume of 0.1 inch in accordance with the regulatory definition of a representative storm. The minimum volume of rainfall for a storm in the winter wet season varies across MS4s from 0.2 inches to 0.22 inches. Since each MS4 calculated average rainfall volumes and duration using data from the same location (Sky Harbor Airport), the variances in average volume and duration across MS4s may be linked to the number of years used to determine the average.

Therefore, for the purpose of establishing a consistent definition of a representative storm for MS4s in the same geographical region, ADEQ defined, in the permit, a minimum volume of rainfall representative of a storm event for the Phoenix metropolitan area as 0.2 inches, regardless of season. This volume is based on the low range of the volume of an average storm for both summer and winter storms, as determined by the MS4s in Maricopa County in the 2001 permit renewal application. For the purpose of simplifying permit monitoring requirements, especially variances in seasonal volumes, the high range of the volume of an average storm event (approximately 0.74 inch in summer and 0.64 inch in winter) has been omitted from the definition in the permit. This simplified approach is currently used by two of the MS4s in Maricopa County (Tempe and Mesa).

In addition, the duration of rainfall representative of an average storm (approximately 2-6 hours in summer and 5-15 hours in winter) has been omitted from the definition because it is not representative of the high intensity storms of short duration characteristic of the region's summer monsoon season. In addition, the high range of duration was identified by EPA as limiting the number of storm events and sampling opportunities for MS4s in Arizona. Omitting the duration of an event from the definition of a representative storm also eliminates inconsistencies in the number of sampling events for MS4s and simplifies permit monitoring conditions. To date, two MS4s in Maricopa County (Mesa and Tempe) have already eliminated the duration criteria from their definition of a representative storm. ADEQ has implemented the same approach in this permit by defining a representative storm event as 0.2 inches of rainfall, regardless of duration.

Wet Seasons: Each MS4 also varied slightly in the months identified as representative of the summer wet season and winter wet season, as used to assess variations in seasonal pollutant loads. For the purpose of simplifying monitoring conditions, maintaining a consistent approach across MS4s, and ensuring that all storm events fall into one of the two seasons for the purposes of monitoring, ADEQ has defined monitoring seasons in the permit as follows:

Summer wet season:	June 1- October 31
Winter wet season:	November 1 – March 31

The frequency for stormwater sampling in this permit is once each wet season (summer and winter) from each of the designated monitoring locations. This is consistent with the

monitoring frequency of twice a year in the City's monitoring program referenced in the initial permit.

First Discharge: Another monitoring condition in this permit requires that stormwater samples include whenever possible the "first discharge" (first 30 minutes of stormwater discharge) of a representative storm to identify high pollutant loads that may shock receiving waters, as well as assess the effectiveness of structural controls, such as retention basins, in managing the initial first flush of pollutants. The first discharge may also be effective in detecting non-stormwater discharges to the stormwater system because such pollutants may be flushed out of the system during the initial portion of the discharge. This permit requires the City to maintain monitoring records, including the volume, duration, and flow rate of stormwater discharge.

Pollutant Loads: The requirement to assess pollutant loadings each year was retained from the initial permit and is included in Section 7.4. The City is required to estimate the loads of certain pollutants (BOD, COD, TSS, TDS, total N, ammonia, TKN, phosphorous and total metals) each year. Pollutant loadings will be estimated from sampling data collected at the representative monitoring locations and will consider land uses and drainage areas for the outfall. The pollutant loadings estimated each year will be compared to previous estimates of pollutant loadings throughout this permit term. Estimates of pollutant loadings will be reported in the annual report and will be accompanied by a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis, and calculation methods.

3. Other Monitoring Requirements
Additional monitoring conditions specified in the permit include monitoring protocols for quality assurance, sample collection, analytical methods, and laboratory selection; monitoring record retention; and conditions for modifying monitoring requirements. Monitoring conditions that are specified in 40 CFR 122.41 (Conditions Applicable to All NPDES permits) and specified in the Standard Conditions of the 1997 permit, such as *Monitoring and Records*, have been relocated to the Monitoring Requirements section of this permit for convenience.

4. Summary of Changes to Monitoring Conditions
   - Added dry weather outfall inspections to monitoring requirements
   - Redefined the conditions of a representative storm event for Maricopa County MS4s
   - Added storm event record requirements
   - Clarified stormwater monitoring frequency as once each wet season rather than twice a year.
   - Defined wet seasons in the permit
   - Specified monitoring locations, coordinates, and receiving waters in the permit
   - Included stormwater monitoring parameters in the permit rather than referencing a separate monitoring program document
   - Specified "standard" stormwater monitoring parameters applicable to MS4s for the upcoming permit term
   - Added monitoring for other priority pollutants in the permit
   - Included sample types for monitoring parameters
   - Added monitoring protocols to the permit (QA, sample collection, laboratory methods)
   - Relocated standard conditions pertaining to monitoring to the monitoring section of the permit
   - Added requirements for modifying monitoring programs (including permit modification)

J. Reporting Requirements (Section 8.0 of this permit)

1. Annual Reporting
The requirement for submitting an annual report on the status of stormwater program activities was retained from the 1997 permit. Similarly, this permit requires that the City prepare an annual report summarizing the progress of the SWMP and the findings of monitoring activities for each year of the permit term. The Annual Report must include an evaluation of the effectiveness of the SWMP in reducing the discharge of pollutants to and from the MS4, and a comparison of discharge quality with applicable water quality standards. The 1997 permit included general annual reporting requirements, resulting in reports from various MS4s that contain different types of information, in various levels of detail, and in multiple formats. This permit specifies information to be provided in the annual report in an effort to clarify the necessary content and the amount of detail.

In addition, ADEQ developed an Annual Report Form (ARF) to specify the minimum information required and provide a consistent and standard format to expedite the annual review. The ARF contains a list of program measures for summarizing the progress of common BMPs in a numeric format. In addition, the ARF is designed to track the progress of activities over the entire permit term rather than for a single year to allow comparison of the status of specific practices. Similarly, the ARF provides a format to track stormwater quality data over the permit term to allow review of water quality by discharge location. In addition to numeric measures, the City is to provide narrative assessments of BMP progress and water quality trends to describe program effectiveness and water quality improvements. The ARF is included in Appendix B of the permit.

2. Discharge above a Water Quality Standard
The City is required to report discharge of a pollutant in concentration that exceeds an applicable surface water quality standard, as measured at the outfall monitoring location. This permit describes the specific information to be reported to ADEQ in this event in Section 8.3. Part 4.0 provisions also describe follow-up actions to be taken by the MS4 in the event a discharge of a pollutant above applicable water quality standards occurs more than one time at an outfall.

3. Reporting Non-filers
A condition is added to this permit for the MS4 to report any identified construction activities or industrial activities occurring without an AZPDES permit to discharge stormwater associated with those activities (i.e. CGP and MSGP non-filers). The determination that an operator is lacking AZPDES permit coverage will be based on inspection of the site or facility, or other information available to the City, such as public complaints, business licenses, building permits, and other City records. The City has no obligation to enforce the state requirement to obtain permit coverage, but general information about the construction project or industrial facility is to be collected and provided to ADEQ on a semi-annual basis. This reporting can be accomplished by e-mail, electronic filing, or by any reliable system that is convenient for the MS4.

4. Other Reporting Requirements
Additional reporting requirements are specified under the Standard Conditions of the permit (Section 9.0), such as 24 hour reporting, anticipated or other noncompliance, and signatory and certification requirements. These standard conditions are referenced in the Reporting Requirements section of this permit for convenience.

5. Summary of Changes to Reporting Conditions
- Clarified the specific information to be provided in the annual report
- Developed an Annual Report Form in the permit (Appendix B)

- Emphasis on patterns of BMP implementation and review of stormwater discharge quality for the duration of the permit term
- Added requirement to report AZPDES permit non-filers
- Referenced the standard conditions pertaining to reporting in reporting section of the permit
- Added reporting location and ADEQ contact information to the permit

K. 4th year Annual Report Requirements (Section 8.1.2 of this permit)
This permit requires the fourth year annual report to be expanded to include specific information. This fourth year annual report will serve as the permittee's renewal application. In addition to the information required in an annual report (see Section 8.1.1 of the Permit), the fourth year annual report is to include the following additional information:

1. Receiving Waters: Identification and description of all surface waters and any other water body or water way (such as a canal) that receives discharges from the MS4, including the designated uses of each receiving water and any known water quality impairments or total maximum daily loads (TMDLs) for the receiving water, or designation of the receiving water as an outstanding Arizona water.

2. Mapping: Submittal of updated map(s) showing MS4 boundaries, receiving waters, and stormwater monitoring location(s) and their associated drainage basins.

3. Rain Gauges: Identification of rain gauge locations for each drainage area within the permit area. Include longitude and latitude for each rain gauge.

4. Discharge Characterization Data: Summary of stormwater quality monitoring data based on all sampling results collected in the permit term. Evaluation of the quality of stormwater discharges from the MS4, including a discussion on the detection and non-detection of specific pollutants. Include an assessment of any trends, improvements, or degradation of stormwater quality discharges from the MS4.

5. Pollutant Loads: Summary of the annual (or seasonal) pollutant loadings for detected pollutants in stormwater discharges from the MS4.

6. Updated SWMP: Provide a copy of the current updated SWMP and associated attachments in Section 5.4 and Appendix C of this permit.

7. Proposed modifications to the monitoring program: Description of any proposed changes to the stormwater monitoring program (such as changes to monitoring locations, parameters, or frequency), including a brief discussion on the reason(s) for modification.

8. Modifications to the Stormwater Management Program: Summary of changes to the Stormwater Management Program that were made during the permit term, including any addition or replacement of BMPs.

9. Proposed modifications to the Stormwater Management Program: A description of any proposed modifications to stormwater management program activities, practices, or controls for the next permit term.

10. Fiscal Analysis: Brief description of the funding sources used to support MS4 Stormwater Management Program expenditures.

L. Standard Conditions (Section 9.0 of this permit)
In accordance with 40 CFR 122.41, conditions applicable to all NPDES permits are included in Section 9.0 of this permit. Other standard conditions are specified in this permit in accordance with 40 CFR 122.21, 122.22, 122.64, Arizona Revised Statutes, and The Clean Water Act.

VI. ADMINISTRATIVE INFORMATION

A. Public Notice (A.A.C. R18-9-A907)
The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft AZPDES permit or other significant action with respect to an AZPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

B. Public Comment Period (A.A.C. R18-9-A908)
Rules require that individual AZPDES permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to ADEQ. After the closing of the public comment period, ADEQ is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

C. Public Hearing (A.A.C R18-9-A908(B))
A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

D. EPA Review (A.A.C. R18-9-A908(C))
A copy of this draft permit and any revisions made to this draft as a result of public comments received will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

VII. ADDITIONAL INFORMATION

Additional information relating to this proposed permit may be obtained from:

Chris Henninger
Arizona Department of Environmental Quality
Water Quality Division
Surface Water Section, Stormwater Unit
Mail Code 5415A-1
1110 W. Washington Street
Phoenix, Arizona 85007
Telephone: (602) 771-4508
Email address: henninger.christopher@azdeq.gov

VIII. REFERENCES

While developing permit conditions for the draft permit, including discharge limitations, special conditions, monitoring requirements, and reporting requirements, the following information sources were used:

A. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2006, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

B. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2005, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

C. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2004, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

D. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2003, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

E. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2002, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

F. *Municipal Separate Storm Sewer System, Annual Report Year Ending June 30, 2001, City of Phoenix, Arizona, NPDES Permit No. AZS000003.*

G. *Municipal Separate Storm Sewer System, NPDES Permit No. AZS000003 Renewal Application*, dated September 14, 2001.

H. National Pollutant Discharge Elimination System (NPDES) Permit for the City of Phoenix MS4, Permit No. AZS000003, dated February 14, 1997 (Effective March 19, 1997) and Permit Modification, dated April 15, 1998 (Effective May 23, 1998).

I. *City of Phoenix Stormwater Management Program* dated October 1, 1996, and revised July 11, 1997.

J. ADEQ's City of Phoenix MS4 permit file, including *EPA's Program Evaluation Report*, dated February 25, 2002, and City of Phoenix's *Response to Program Evaluation Report*, dated April 12, 2002.

K. Arizona Administrative Code (A.A.C.) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters,* adopted March 31, 2003.

L. A.A.C. Title 18, Chapter 9, Article 9, *Arizona Pollutant Discharge Elimination System*

M. Code of Federal Regulations (CFR) Title 40, Part 122, *EPA administered permit programs: The National Pollutant Discharge Elimination System*

O. EPA preliminary comment letter on the draft permit, May 30, 2008

APPENDIX A

Stormwater Management Program (SWMP) - Measurable Goals

The Permittee's SWMP shall detail the approach and processes necessary to achieve the following measurable goals. The MS4 shall keep systems in place and maintain records adequate to demonstrate compliance with Appendix A provisions. Where optional (i.e., 'menu') choices are provided, the Permittee may choose between options during each specific year of the permit without modification of this permit. Progress on the following goals shall be reported each year in the Annual Report.

At a minimum, the Permittee shall implement each of the following provisions:

I. PUBLIC EDUCATION/OUTREACH

The MS4 shall provide outreach and education to the general public, businesses, and developers on the stormwater program issues and requirements. The SWMP shall include details of the outreach strategy that shall run the full term of the permit.

A. **Measurable Goal:** At a minimum, provide public education/outreach to at least one target group on one (1) of the topics listed below during each year of the permit. Report in the Annual Report the outreach approach selected, the topic, the Target Group and an estimated number of participants reached.

Target Group	***Topics***
General Public Residential Community Home Owners HOAs Schools	• Post-construction ordinances and long-term maintenance requirements for permanent stormwater controls • Stormwater runoff issues and residential stormwater management practices • Potential water quality impacts of application of pesticides, herbicides and fertilizer and best management practices to minimize runoff of pollutants in stormwater • Potential impacts of animal wastes on water quality and the need to clean up and properly dispose of pet waste to minimize runoff of pollutants in stormwater • Illicit discharges and illegal dumping, proper management of non-stormwater discharges, and to provide information on reporting spills, dumping, and illicit discharges • Spill prevention, proper handling and disposal of toxic and hazardous materials, and measures to contain and minimize discharges to the storm sewer system • Installation of catch basin markers or stenciling of storm sewer inlets to minimize illicit discharges and illegal dumping to the storm sewer system • Proper management and disposal of used oil

B. **Measurable Goal:** At a minimum, provide Business Sector education/outreach to at least one (1) target group on an appropriate topic listed below during each year of the permit. Report on the Annual Report the outreach approach selected, the topic, Target Group and an estimated number of participants reached.

Target Group	***Topics***
Development Community Construction Site Operators Targeted sources or Types of Businesses (industrial or commercial)	• Planning ordinances and grading and drainage design standards for stormwater management in new developments and significant redevelopments. • Municipal stormwater requirements and stormwater management practices for construction sites. • Illicit discharges and proper management of non-stormwater discharges. • Spill prevention, proper handling of toxic and hazardous materials, and measures to contain and minimize discharges to the storm sewer system. • Proper management and disposal of used oil and other hazardous or toxic materials, including practices to minimize exposure of materials/wastes to rainfall and minimize contamination of stormwater runoff. • Stormwater management practices, pollution prevention plans, and facility maintenance procedures.

II. PUBLIC INVOLVEMENT

A. **Measurable Goal**: The MS4 shall implement at least one (1) of the following to provide fundamental support to the MS4's SWMP:

- Provide the opportunity to involve the public in the City's stormwater management program and to encourage public participation in monitoring and reporting spills, discharges, or dumping within their communities (such as facilitation of neighborhood watch groups) once per year.

- Provide the public an opportunity to participate in the City's stormwater management program, such as voluntary litter control activities (e.g. Facilitation of Adopt-A-Wash, Adopt-A-Park, and Adopt-A-Street litter control activities) or voluntary erosion control projects. Maintain and support program as a regular ongoing activity.

- Provide the public with a household hazardous waste program to facilitate proper disposal of used oil, antifreeze, pesticides, herbicides, paints, and other hazardous and toxic materials by city residents (such as scheduled household hazardous waste collection events or operation of full time disposal facilities) a minimum of 2 times per year for the first 2 years of the permit, 6 times per year for years 3 and 4 of the permit, and 8 times per year thereafter.

B. **Measurable Goal:** The MS4 shall provide and publicize a reporting system to facilitate and track public reporting of spills, discharges or dumping to the storm sewer system (i.e. stormwater hotline, web page, etc.) on a continuous basis.

III. ILLICIT DISCHARGE DETECTION & ELIMINATION (IDDE)

The SWMP shall detail the components and implementation of the MS4's IDDE program to include the following elements:

A. MUNICIPAL EMPLOYEE TRAINING [1]

(1) Training to educate and update inspectors and stormwater field staff on detecting, investigating, and identifying illicit discharges, De Minimus discharges, and other sources of non-stormwater discharges (i.e. field screening procedures, sampling methods, field measurements).

Measurable Goal: The City shall provide new employee training at least two times per year and provide refresher training for existing employees directly involved with stormwater management activities at least once every two years. In the event there are no new employees in a given period, the permittee shall sufficiently document in the Annual Report that no new employees were hired or retained during said period.

(2) Training to educate field staff with no direct stormwater responsibilities on illicit discharges and practices for managing non-stormwater discharges. Select groups of field staff will be described in the SWMP ("Select groups" shall be described in the SWMP and include those with the potential to directly impact stormwater discharges).

Measurable Goal: The City shall develop stormwater pollution awareness training within one year. Present the training to select groups of field staff annually thereafter.

B. SPILLS

(1) The City shall implement practices and procedures at municipal facilities to prevent spills which may contact stormwater.

Measurable Goal: Each municipal facility, that handles, stores, or otherwise uses hazardous materials, where any single container exceeds 5 gallons, shall have site-specific materials handling and spill response procedures. A Facility Assessment shall be conducted at each of these facilities at least once during the permit term to ensure procedures are in place and effective. Some City-owned facilities that are included in this Section may be permitted under the MSGP or another AZPDES permit. In this case, the specific permit shall govern.

(2) MS4s shall properly handle, store, transport, and dispose used oils and other hazardous or toxic materials and wastes associated with municipal operations and facilities, including practices to minimize exposure of these materials to precipitation.

Measurable Goal: The City shall maintain Hazardous Materials Management Procedures (HMMP), and make them readily available at all City facilities. A committee shall review the HMMP every two years, and revise as necessary. The review committee shall include a person with stormwater expertise to provide feedback relating to any potential stormwater concerns.

[1] Municipal employee training is not required for services subcontracted to a qualified contractor.

C. MAJOR OUTFALLS as defined by 40 CFR 122.26 and Field Screening Points

(1) The City shall maintain an inventory or map of all major outfalls, and of other field screening points (if applicable), identified by the Permittee as priority for illicit discharges or other non-stormwater flows.

(2) The MS4 shall conduct ongoing dry weather field screening of outfalls. Field screening includes:

- Visual inspection for flow, trash, suds, odors, etc.
- Field sampling, when significant flow is observed for chemical indicator parameters.
- Re-inspection and sampling within 24 hours, if flow is still present.

The IDDE field screening program shall be further detailed in the SWMP.

D. INSPECTIONS of major outfalls:

(1) **Measurable Goal**: The City shall inspect the following 'priority' outfalls once each year:

- Major outfalls that discharge to an impaired or unique water or other perennial water;
- Major outfalls that have been a source of illicit discharge in the past five years (unless the source has been eliminated or has been shown not to be a major source of pollutants); and
- All outfalls identified as priority by the Permittee [see III (C) (1) above] for illicit discharges or other non-stormwater flows.

(2) **Measurable Goal:** At a minimum, the City shall inspect approximately 20% of the remaining Major Outfalls each year so that all Major outfalls are inspected at least once every 5 years. *[Note: The City currently has identified 464 major outfalls.]* The permittee shall document inspections, findings and report evidence of non-stormwater flows, and follow-up actions taken by the City.

E. INVESTIGATION - The City shall investigate reported potential illicit discharges and identified dry weather flows to identify source(s). Investigation may include discharge sampling, data collection and research, and storm sewer inspections. The City shall develop criteria by which to determine whether dry weather flows contain illicit connections or discharges, and shall implement a program to effectively make such determinations.

Measurable Goal: The City shall respond to at least 90% of all reports of illicit discharges to the MS4.

Measurable Goal: The City shall initiate investigation of at least 80% of potential illicit discharges identified by field screening, public reporting or other detection methods within 15 days of the date of detection or report. However, investigation of obvious wastewater discharges (such as sewage, sudsy water, colored waters, etc.) that are flowing at the time of inspection shall be initiated immediately upon detection.

F. ILLICIT DISCHARGE ELIMINATION - The MS4 shall eliminate identified sources of illicit discharges to the stormwater system, and take timely and appropriate action, including escalating enforcement response, when necessary to terminate illicit discharges.

Measurable Goal: Initiate corrective action or enforcement mechanisms to eliminate: 1) illicit discharges the City has identified to-date that are not yet resolved within 120 days of permit issuance, and 2) any new illicit discharges detected within 60 days of identification of source. However, sources that are fully investigated and that the Permittee determines do not contain significant levels of pollutants are not subject to these timeframes for correction. In this event, the City shall maintain documentation of the investigation, sampling, and reasons for determination that such discharges do not contain significant levels of pollutants.

G. COMPLIANCE ACTIVITIES / ENFORCEMENT - The City shall follow enforcement procedures that incorporate escalating actions for violations of municipal stormwater requirements, ordinance or code identified during inspections.

Measurable Goal: The Permittee shall follow the City's Enforcement Response Plan (ERP), for resolution of all violations. At least 80% of all cases handled under the ERP will be satisfactorily resolved within one calendar year from the original Level One enforcement action. *[Note: The ERP contains multiple levels of escalation. 'Level One' is the lowest level of enforcement response and is a verbal exchange between an inspector and violator.]*

IV. MUNICIPAL FACILITIES

A. EMPLOYEE TRAINING [1]

Measurable Goal: Provide new employee training at least two times per and provide refresher training for existing employees directly involved in these activities at least once every two years. Specific staff to be trained for each topic is to be identified in the SWMP. Training shall include:

(1) Proper street repair and road improvement practices to minimize discharges to the storm sewer system.
(2) Specific procedures and spill management practices to prevent or minimize spills or discharges to the storm sewer system.
(3) Proper handling, storage, transportation, and disposal of used oil and other toxic and hazardous materials and wastes to prevent spills, exposure to rainfall, and contamination of stormwater runoff.
(4) Water and sanitary sewer system maintenance and repair practices to minimize discharges.
(5) Stormwater management practices and pollution prevention plans for municipal stormwater inspectors. Training shall include information on Phoenix City Code Chapter 32C, and may also include other stormwater discharge regulations and permit requirements.

In the event there are no new employees in a given period, the permittee shall document in the Annual Report that no new employees were hired or retained during said period to support why training was not conducted.

B. MUNICIPALLY-OWNED AND OPERATED FACILITIES

Some City-owned facilities that are included in this Section may be permitted under the MSGP or another AZPDES permit. In this case, the specific permit shall govern. The City shall, however, develop an internal process to determine facilities that may require coverage under the MSGP or alternative permits, and maintain an inventory or other tracking mechanism of such sites.

(1) The MS4 shall develop and maintain an inventory/list/database or map of facilities owned and operated by the MS4 (excluding office and administration buildings) that have the potential to discharge pollutants to waters of the U.S. This information shall include the name and address of the facility, latitude/longitude, facility contact, and brief description of activities that may generate pollutants of concern. These include, but are not limited to, the following types of facilities:

- City parks, golf courses, and other recreational facilities (where landscape maintenance, herbicide, pesticide, and fertilizer application, and waste management are implemented)
- Public swimming pools (pool maintenance/repair and chemical storage)
- Water treatment plants
- Public septic systems (sanitary waste handling)
- Fire stations and other city fleet maintenance facilities (vehicle washing and maintenance, chemical handling, waste storage)

[1] Municipal employee training will not be required for services subcontracted to a qualified contractor.

- POTWs and sludge handling areas; and
- Material and waste storage and processing facilities, including oil collection facilities.

Measurable Goal: The City shall develop an inventory / database / list or map of facilities described above within 2 years after the date of permit issuance. The process for developing, review and update of this information on a periodic basis shall be described in the SWMP.

(2) Based on the inventory, the permittee shall review the potential pollutants and other factors of risk at such facilities and prioritize them for an on-site review to determine whether they may have a potential to cause a substantial pollutant load (i.e., identify 'high risk' facilities).

Measurable Goal: Develop a system to review and prioritize the municipal facility inventory [IV.B (1)] and include it in the SWMP. The City shall complete the prioritization process within three years of permit issuance.

Factors that will be considered for purposes of prioritization include:

- Quantity and location of materials used and/or stored at the facility
- Potential for exposure to stormwater
- Potential to discharge a substantial pollutant load to the MS4 or to a water of the U.S.

Facilities that are already covered under the MSGP or other AZPDES permits will be ranked as low priority for consideration under this permit.

C. INSPECTIONS – The MS4 shall perform the following:

(1) MS4 Drainage System Components – The permittee shall perform routine visual monitoring of MS4 system components to identify the presence of illicit discharges, excess sediment, litter, debris, or other pollutants (including floatables) that may obstruct flow or be transported in stormwater, and to determine maintenance needs. (*Note: Such components may include drainage/infiltration channels, washes, roadside drainage structures (i.e. linear systems) and retention and detention basins.)*

Measurable Goal: The City shall define areas of the MS4 drainage system that are a priority for inspection, based on system history, and other concerns that shall be identified in the SWMP. These priority areas shall be inspected at least once each year.

(2) Municipal Facility Inspections – The permittee shall inspect each 'high risk' municipal facility (see IV.B(2)) and shall also recommend repair or maintenance of BMPs, as necessary, or other pollution prevention activities that may improve the quality of stormwater discharged from the site.

Measurable Goal: Inspect each of the 'high risk' facilities (to be identified by year three) by the expiration date of the permit. (If any of the above are permitted under the MSGP, completion of the annual Comprehensive Site Evaluation required by that permit will satisfy this provision.)

Measurable Goal: The City shall identify municipal facilities inspected each year in the Annual Report and provide comment whether improvements were needed. The City shall initiate any recommended improvements within 3 months of the inspection and set a schedule for implementation. The City shall maintain a system for tracking the status of improvements and date(s) of implementation.

D. SYSTEM MAINTENANCE – The MS4 shall:

(1) Address maintenance needs identified as deficient by inspections, monitoring, or other reporting including:

- Maintenance and cleaning of municipal drainage/infiltration channels, ditches, washes and roadside drainage structures to minimize the discharge of pollutants from the drainage system, including litter and debris control.
- Maintenance and cleaning of municipal retention and detention basins to minimize the discharge of pollutants from the drainage system, including litter and debris control.
- Maintenance and cleaning of municipal streets used for stormwater conveyance, street/roadway catch basins, and storm drain inlets to minimize the discharge of pollutants from the drainage system.

Measurable Goal: Evaluate drainage system maintenance priorities and update the monitoring schedule at least once each year. The City shall report the number of units (street miles, unit number of storm drain inlets, pounds of debris, etc.) cleaned each year in the Annual Report

(2) Sweep municipal streets and roads, and roads and parking areas in city parks, recreational areas, and city facilities as needed to minimize the accumulation and transport of sediment and litter to the storm sewer system.

The sweeping program and rationale for sweeping frequency shall be described in the SWMP. The MS4 shall provide information about sweeping activities in the Annual Report each year.

Measurable Goal: Evaluate street sweeping frequency at least once a year. Report the amount (e.g., pounds, gallons, etc) of materials collected from street and lot sweeping in the Annual Report.

E. MUNICIPAL SYSTEM MAPS -The permittee shall prepare and routinely update maps of the MS4 system. The preferred format is ESRI shapefiles, projected in meters to UTM zone 12 with a NAD83 datum. Geographic Information System (GIS) layers should show where stormwater runoff is routed during a storm event. The stormwater system map(s) shall include the following information:

Measurable Goal: The City shall incorporate mapping of at least the following items in the fourth (4^{th}) year annual report:

1. Linear Drainage Structures
   Line layer showing the location of all stormwater system pipes and the direction of stormwater flow.

2. Storm Drain Inlets and Catch Basins
   Point layer showing the locations of all storm drain inlets and catch basins.

3. Outfalls
   a) Point layer showing the location of all major outfalls (pipes or culverts).
   b) Polygon layer showing the drainage area associated with each of the monitored outfalls identified in Table 1 of the permit.

4. Detention/Retention Basins
   Point or polygon layer showing the locations of all identified city-owned retention and detention basins that are connected to the municipal stormwater conveyance system (i.e. that receive drainage from or discharge to a stormwater conveyance).

5. Jurisdictional MS4 Boundary
Line or polygon layer showing the jurisdictional boundaries of the MS4, including any new land annexations during the permit term.

Measurable Goal: The City will complete a study that evaluates the cost, method, and time it will take to complete the following. The results of this study shall be submitted with the 4th year Annual Report.

1. Linear Drainage Structures
a) Line layer showing the location of all streets used for stormwater conveyance and the direction of stormwater flow.
b) Line layer showing other linear stormwater conveyance structures (channels, floodways, etc.) and the direction of stormwater flow.

2. Outfalls
Polygon layer showing the land uses within each drainage area associated with each major outfall.

3. Detention / Retention Basins
a) Point layer showing the location of all privately-owned retention and detention basins that are connected to the municipal stormwater conveyance system (i.e. that receive drainage from or discharge to a stormwater conveyance).
b) Polygon layer showing the drainage area associated with each retention / detention basin.

4. Receiving Waters
Line or polygon layer showing the location (and name) of any river, canal, lake, or named-wash that may receive stormwater discharges from the MS4 stormwater conveyance system. Any waterbody that is listed as a Unique Water (A.A.C. R18 -11-112) or as an Impaired Water (Arizona's 2004 303(d) and Other Impaired Waters List) shall be clearly identified.

V. INDUSTRIAL SITES (Non-Municipally Owned)

A. MUNICIPAL EMPLOYEE TRAINING [1] - Training to educate and update inspectors on stormwater management practices and BMPs for facilities subject to inspection. Training shall include information on requirements for stormwater discharges associated with industrial activity.

Measurable Goal: The MS4 shall provide new employee training at least two times per year and shall provide refresher training for existing employees directly involved in these activities at least once every two years. In the event there are no new employees in a given period, the permittee shall sufficiently document in the Annual Report that no new employees were hired or retained during said period.

B. INVENTORY - The MS4 shall maintain the following information:

Industrial Facility Inventory (non-municipal)
The MS4 shall develop and maintain an inventory / list / database of known industrial facilities, including the facility location, and a brief description of facility activities (i.e., automobile service and repair facilities, salvage yard, etc.). The inventory shall include the following:

(1) Industrial facilities identified in 40 CFR 122.26(d)(2)(iv)(C)
(2) Other industrial and/or commercial sources (or categories of sources) which may be significant sources of pollutants.

[1] Municipal employee training will not be required for services subcontracted to a qualified contractor.

Measurable goal: Maintain a system to collect and update this information on a routine basis. The SWMP shall describe the system used to track and maintain this information.

C. INSPECTIONS - To identify and eliminate potential discharges of pollutants to the system, to verify implementation and maintenance of stormwater management practices in compliance with municipal ordinances, and to confirm ADEQ authorization to discharge stormwater associated with industrial activity, as applicable to specific industrial facilities (i.e. NOI Authorization).

Measurable Goal: Within the 5 year permit term, the city of Phoenix shall at a minimum inspect 1,700 industrial facilities[1] that are identified in Part V.B Inventory, including re-inspections, as deemed necessary. The SWMP shall describe the inspection and prioritization program. The number of inspections completed each year shall be documented in the Annual Report.

Phoenix shall also evaluate alternatives for enhancement of the industrial/commercial stormwater program, with a goal toward increasing field presence through increased numbers of inspections and increasing interaction with commercial and industrial facilities through outreach or other innovative measures. The City shall also develop a system of prioritization of inspections with focus on facilities with high potential to cause stormwater pollution. The revised SWMP shall outline an approach to evaluating program alternatives and re-prioritization of efforts. Progress toward this initiative shall be reported in the 4th year Annual Report.

D. COMPLIANCE ACTIVITIES/ENFORCEMENT - The City shall implement an effective compliance and enforcement program that incorporates escalating actions for violations of municipal stormwater requirements, ordinance or code identified during inspections.

Measurable Goal: Follow the City's Enforcement Response Plan, including timeframes for all violations. At least 80% of the cases handled under the ERP will be satisfactorily resolved within one calendar year from the original Level One enforcement action.

VI. CONSTRUCTION SITES

A EMPLOYEE TRAINING [2]

Measurable Goal: The MS4 shall provide new employee training at least two times per year and shall provide refresher training for existing employees directly involved in these activities at least once every two years. In the event there are no new employees in a given period, the permittee shall sufficiently document in the Annual Report that no new employees were hired or retained during said period. Training shall include the following:

Review Staff with Stormwater Responsibilities	▪ Grading and drainage design standards ▪ Review procedures ▪ Municipal ordinances related to stormwater and construction ▪ Requirements for structural and non-structural management practices on construction sites, such as erosion and sediment controls ▪ Post-construction stormwater controls

[1] This number may also include municipally owned facilities.
[2] Municipal employee training will not be required for services subcontracted to a qualified contractor.

Inspection Staff with Stormwater Responsibilities

- Municipal ordinances related to stormwater and construction
- Requirements for structural and non-structural management
- practices on construction sites, such as erosion and sediment controls
- Construction BMP maintenance requirements
- Inspection procedures
- Enforcement procedures

B. INVENTORY – The MS4 shall develop an inventory / list / database or map of construction projects that submit for plan review or approval by the Permittee.

Measurable Goal: Complete a comprehensive inventory within one year. Maintain and update annually, thereafter.

C. PLAN REVIEW AND APPROVAL – For construction projects that will result in land disturbance over 1 acre (including those less than 1 acre, but are part of a larger common plan of development) the MS4 shall:

(1) Review plans for new development and redevelopment (such as grading and drainage plans). The review shall verify conformance with the City's requirements for stormwater, erosion and sediment control prior to issuing construction approvals or authorizations.

(2) Require a copy of the ADEQ authorization document for non-municipal construction projects (as required by municipal stormwater requirements or ordinances or state stormwater requirements) to be submitted prior to issuing construction approval or authorization.

Measurable Goal: Review at least 80% of plans. Report number of plans submitted and the number reviewed each year in the Annual Report.

D. INSPECTIONS – The MS4 shall inspect projects to determine whether effective erosion and sediment controls are in place, and verify conformance with local stormwater requirements and approved construction plans.

Measurable Goal: Inspect the sites that are identified in the inventory (VI.B) at least once during construction. Report the number of sites inspected each year on the Annual Report.

E. POST-CONSTRUCTION CONTROLS - The MS4 shall inspect projects in the post-construction phase to determine if controls are adequate.

Measurable Goal: The MS4 shall inspect at least 80% of sites that have received City permits within 1 year after construction has been completed to determine the effectiveness of site stormwater controls. The City shall report the number of sites that receive post-construction inspections in the Annual Report.

F. COMPLIANCE ACTIVITIES/ENFORCEMENT - The MS4 shall implement an effective compliance and enforcement program that incorporates escalating actions for violations of municipal stormwater requirements, ordinance or code identified during inspections.

Measurable Goal: Follow the City of Phoenix's "Development Services and the Department's "Civil Citation Process" to address code and ordinance violations. The permittee shall document areas of non-compliance and follow-up actions taken by the City to achieve compliance.

APPENDIX C

Stormwater Management Program (SWMP) Requirements

The Stormwater Management Program (SWMP) shall be developed, maintained, and updated as necessary to reduce the discharge of pollutants to the municipal storm sewer system to the maximum extent practicable. The written plan shall describe the best management practices and pollutant controls established to reduce the discharge of pollutants, and shall, in addition to any specific requirements of this permit, address the following elements. If the permittee does not generally follow the format which follows, include a cross reference to where the following provisions may be found in the SWMP document.

The Permittee's SWMP shall detail 1) the current status of the program with respect to the issues in this appendix, and 2) the approach and processes necessary to achieve the provisions of this permit throughout the permit term. The SWMP shall describe systems in place, goals and timelines to demonstrate compliance with Appendix A, and also address the following areas:

PUBLIC EDUCATION/OUTREACH Describe on-going and planned outreach activities to educate the community (developers, contractors, homeowners, public, etc.) on stormwater best management practices. (Include the frequency and type of outreach, target audiences and the development and distribution of educational materials.)

PUBLIC INVOLVEMENT Describe on-going and planned processes to involve the public in the SWMP and in activities to implement the SWMP.

ILLICIT DISCHARGE DETECTION & ELIMINATION (IDDE) Describe the permittee's comprehensive IDDE program as follows:

MEASURES TO CONTROL ILLICIT CONNECTIONS AND ILLEGAL DUMPING TO THE MUNICIPAL STORM SEWER SYSTEM

A description of a program to detect and eliminate illicit discharges and improper disposal to the storm sewer, including the following information:

- **Practices for Preventing Illicit Discharges**
  - Illicit Discharge Ordinance: A description of the ordinance(s) used to prohibit and eliminate illicit discharges to the storm sewer system. Include, as an attachment, a copy of the ordinance(s);
  - Non-Stormwater Discharge Evaluation: A description of the program to manage non-stormwater discharges to the municipal storm sewer system (such as approvals, permits, or discharge notifications), including a list of the types of non-stormwater discharges that are or will be allowed to discharge to the storm sewer system; and
  - Non-Stormwater Discharge Records: A description of the MS4's system for tracking and recording non-stormwater discharges.

- **Practices and Procedures for Field Screening** (dry weather outfall monitoring)
  - Outfall Inventory: An inventory of major outfalls [1], organized by drainage area or a mapping system showing outfalls;
  - Inspection Priorities and Schedule: A description of the priorities and schedule for inspecting major outfalls and screening points; the priorities for inspection and the basis for those priorities; and the frequency and schedule of inspections for major outfalls;
  - Field Screening Procedures [2]: A description of standard procedures and methods for inspecting and screening outfalls, documenting conditions, and reporting potential illicit discharges. Describe the system used to track and record findings; and

- Staff Training (Screening and Investigation): A description of training to educate and update inspectors and other field staff on detecting, investigating, and identifying illicit discharges (to include. field screening procedures, field measurements, sampling methods, use of chain-of custody protocols when analytical monitoring is used). Include the frequency and type of training.

➢ **Investigating Potential Illicit Discharges**

- Dry Weather Discharges: The City shall develop and include in the SWMP a detailed field screening protocol for investigating dry weather discharges. This shall include criteria to identify, characterize and prioritize dry weather discharges; determine the source (s) and develop a schedule for their timely elimination. This shall include the rationale for selection of dry weather field screening locations and for performing appropriate follow-up analytical monitoring. Include visual and analytical monitoring procedures, and specify how and when decisions are made to sample;
- Existing Dry Weather Flows: During the term of this permit, the COP shall re-evalute any known dry weather discharges that have not been eliminated or investigated in the last 5 years;
- Illicit Discharge Investigation (Source Identification): Describe the MS4's practices and procedures to investigate potential illicit discharges and other sources of non-stormwater, including methods to identify possible sources (such as sampling procedures, storm sewer investigation practices, research of non-stormwater discharges, etc.). The IDDE provisions in the SWMP shall include field screening thresholds to indicate when an illicit discharge may be present and follow-up investigations are necessary;
- Industrial Facility Inspections: Describe the inspection practices for industrial facilities to identify cross connections with sanitary sewer lines and other potential sources of illicit discharges or releases of toxic materials to the storm sewer system;
- Tracking and Reporting: Describe the MS4's process to summarize and report the results of dry weather field screening and analytical monitoring, including the identification and elimination of illicit connections and illegal discharges; and
- Illicit Discharge Elimination: Describe the process for conducting follow-up source identification investigation, and the enforcement strategy to eliminate sources of illicit discharges and ensure compliance with illicit discharge ordinances. Include a description of the type of corrective and enforcement actions (notice of correction, notice of violation, fines, etc.) that may be initiated.

➢ **Illicit Discharge Public Awareness and Reporting Program**
Practices to promote, publicize, and facilitate public reporting of illicit discharges to or from the municipal storm sewer system.

MUNICIPAL FACILITIES

PROPER MANAGEMENT OF USED OILS AND TOXICS

Describe practices used to facilitate the proper management and disposal of used oil and toxic materials generated by the MS4.

CONTROLS FOR PESTICIDES, HERBICIDES, AND FERTILIZERS

The SWMP shall describe a program to effectively minimize pollution from pesticide/herbicide use at city facilities. The Permittee shall only apply pesticides that are FIFRA approved for aquatic application in any area within or adjacent to a WUS, including ephemeral washes.

SPILL PREVENTION AND RESPONSE
Describe practices and procedures to prevent, contain, and otherwise manage spills to minimize discharges to the municipal storm sewer system.

MEASURES TO REDUCE POLLUTANTS FROM RESIDENTIAL AND COMMERCIAL AREAS

- **Drainage System Maintenance (structural controls)**
  Practices for the maintenance of stormwater collection and conveyance structures to reduce the discharge of pollutants to and from the municipal storm sewer system, including the following areas:

  - Drainage System Inventory/Maps;
  - Drainage System Monitoring Program;
  - Maintenance Priorities and Schedule; and
  - System Maintenance (drainage channels, washes, and retention basins).

- **Controls for New Developments and Significant Redevelopment**
  Planning procedures and post-construction practices to reduce the discharge of pollutants from newly developed and redeveloped areas to the MS4, including a brief summary of:

  - Post-construction Ordinances applicable to stormwater controls or quality;
  - Design and Maintenance Standards applicable to post-construction (including the standard, review and implementation processes);
  - Plan Review (including post-construction controls) and approval process;
  - Inspection Program (including practices. priorities, frequency, percentages, and timing); and
  - Enforcement Strategy/Actions (including types, procedures, timelines).

- **Operation and Maintenance of Public Streets, Roads, and Highways**
  Practices for operating and maintaining public streets, roads and highways to reduce the discharge of pollutants and from the municipal storm sewer system, including the following:

  - Drainage System Visual Monitoring;
  - Maintenance Priorities and Schedule;
  - System Maintenance Practices (drainage channels, washes, roadway catch basins/storm drain inlets and retention basins) and cleaning activities;
  - Street/Parking Lot Sweeping Program (frequency, priorities, schedule); and
  - Street Repair Practices (staff training and standard BMPs and procedures for repairs improvements in a manner that protects stormwater and storm drains).

- **Additional Practices to Reduce Pollutants from Residential and Commercial Areas**
  Describe additional practices underway or in place to reduce pollutants from commercial and residential areas to the municipal storm sewer system.

INDUSTRIAL SITES

MEASURES TO CONTROL POLLUTANTS

A description of a program to monitor and control pollutants in stormwater discharges from industrial facilities that contribute pollutants to the MS4, including the following information:

- **Identify Priorities and Implementing Controls**
  Procedures and priorities for conducting inspections and implementing control measures, including the following:

  - Industrial Facility Inventory: A process to develop and maintain an inventory of industrial facilities not operated by the MS4, which have the potential to discharge to the MS4. This is to include the facility name and address and the Standard Industrial Classification (SIC) code(s) which best reflects the principal products or services provided by each facility;
  - Municipal Facility Inventory: An inventory and brief description of municipally-owned and operated facilities (other than administrative buildings) that have a potential to contribute pollutants to the MS4 system. Include the name and address, the operational status (operating or closed), and the Standard Industrial Classification (SIC) code(s) which best reflects the services provided by each facility. Provide, as an attachment, the inventory of municipal facilities;
  - High Risk Facilities: Identification of industrial, municipal, or commercial facilities (or categories of facilities) that may be the most significant sources of pollutants or otherwise may have a high risk of contributing pollutants to the storm sewer system, including a description of the basis (criteria) for establishing these facilities as high risk facilities. Identification of risk may be based on the type of facility (i.e. nature of industrial activity), the products or services provided by the facility, proximity to receiving waters, receiving water quality, and other factors that indicate the potential to impact water quality; and
  - Stormwater Management Evaluations (Municipal Facilities) [3]: A general plan for review of stormwater best management practices, BMPs, and maintenance procedures implemented at municipally operated facilities to minimize the discharge of pollutants from the site. Include a process to evaluate compliance with state (i.e., the requirement for AZPDES permits) stormwater requirement as applicable.

- **Inspections and Monitoring**
  Inspection of industrial facilities and monitoring of discharges associated with industrial facilities that may impact stormwater, including the following:

  - Inspection Procedures: A description of standard procedures for inspecting industrial facilities, documenting facility conditions, and reporting potential sources of pollutants or illicit discharges. Describe the system to document and retain the inspection findings;
  - Industrial Facility Inspections – High Risk: A description of the inspection program implemented for high risk industrial or commercial facilities (or categories of facilities) to identify and eliminate potential discharges of pollutants to the storm sewer system, verify implementation and maintenance of stormwater best management practices in compliance with municipal stormwater ordinances, and confirm ADEQ authorization to discharge stormwater associated with industrial activity, as applicable (i.e. NOI Authorization). Include information on the schedule for inspecting high risk facilities (i.e. frequency of inspections) throughout the permit term; and
  - AZPDES Non-filers: A description of the method for tracking and reporting industrial facilities that are not authorized by ADEQ (i.e. NOI Authorization) under the AZPDES Multi-Sector General Permit for Stormwater discharges associated with industrial facilities including the type of information that is reported to ADEQ.

- **Other Measures to Control Pollutants from Landfills, Municipal Waste Facilities, and Industrial Facilities**
  A description of any other practices implemented to control pollutants from landfills, municipal waste facilities, and industrial facilities.

CONSTRUCTION SITES

MEASURES TO CONTROL POLLUTANTS FROM CONSTRUCTION SITES

A description of a program to reduce pollutants in stormwater runoff from construction sites to the MS4, including the following information:

- **Reviewing Construction Site Plans**
  Procedures for site planning which incorporate consideration of potential water quality impacts, including the following practices:

  - Maintaining a construction project inventory;
  - MS4 Plan Review of construction sites[4] (i.e., what types of sites are reviewed; approvals or permits required; MS4 process summary);
  - Staff Training (with respect to the Plan Review process); and
  - Plan Approvals (or Permits): A description of the approval process to authorize new construction projects (such as municipal stormwater permits) upon verification that construction plans (stormwater pollution prevention or management plans) comply with municipal stormwater requirements for stormwater best management practices, and that the operator has obtained AZPDES authorization (NOI Authorization) to discharge stormwater associated with construction activity.

- **Structural and Non-Structural Stormwater Best Management Practices**
  Municipal requirements relating to structural and non-structural stormwater best management practice, including construction standards and ordinances as related to stormwater.

  - The MS4 shall establish standard procedures and practices for design & maintenance of post-construction stormwater controls (such as standards for open space preservation, on-site stormwater retention, and maintenance of pre-construction run-off rates and long-term maintenance controls.

  - The City shall continue to implement the requirement for new facilities to install and maintain on-site detention for a 100-year, 2 hour storm event in all areas of the Phoenix except those exempted by law or excluded under the technical appeals process. When possible, the City shall require such exempted facilities to install stormwater protection controls and BMPs.

  - The MS4 shall evaluate the potential for incorporating additional Low Impact Development (LID) practices into the City's site planning and development processes.

- **Site Inspections and Enforcement**
  Procedures and priorities for inspecting construction sites and enforcing municipal ordinances, plan approvals (or permits), and design and maintenance requirements for stormwater controls, including the following practices:

  - Inspection Priorities;
  - Inspection Procedures;
  - Inspection Records;

- Inspector Training;
- Enforcement Processes and Actions; and
- Reporting of AZPDES Non-filers.

➢ **Other Practices to Control Pollutants from Construction Sites**
A description of any other practices (structural or non-structural practices) the MS4 employs to control pollutants from construction sites.

SWMP ATTACHMENTS:
As per the provisions of the permit, some of the following may not be initially developed or fully developed at the time of submittal of the revised SWMP. In this case, the permittee is to attach those available and provide a status of those that are not yet developed.

- Drainage system maps;
- Map/ Inventory and location of structural control facilities (retention and detention basins, conveyances, major infiltration structures);
- Map/ Inventory of major outfalls, with latitude and longitude and drainage area;
- Inventory of municipal facilities and operations with a potential for significant discharge of pollutants to stormwater;
- Map/ Inventory of municipally-owned and operated "categorical" industrial facilities (facilities listed in 40 CFR 122.26(b)(14)(i) through (ix) and (xi), with SIC number and AZPDES permit number(s) (Refer to Part C.1.b);
- Identification of all open and closed landfills, hazardous waste treatment, storage, or disposal facilities, and facilities subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA);
- Copy of each ordinance addressing stormwater and non-stormwater issues, including construction activity, development/planning, post-construction, illicit discharges, connections, and dumping, industrial activity, used oil and waste disposal, sanitary sewer use, etc.; and
- Certification Statement (Refer to Section 9.2 and 9.12 of the permit).

ENDNOTES:

1. Major Outfall: means a municipal separate storm sewer outfall from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more, or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). [40 CFR 122.26(b)(5)]

2. Field Screening Procedures: As set forth at 40 CFR 122.26(d)(1)(iv)(D).

3. Stormwater Management Evaluation: (Municipal Facilities)Industrial facilities listed at 40 CFR 122.26(b)(14)(i) through (ix) and (xi) that have the potential to discharge stormwater to waters of the U.S. or to a MS4 are subject to the AZPDES General Permit for stormwater discharges associated with industrial activity, including landfills, treatment works, and airports. These facilities are required to obtain AZPDES general or individual permit authorization, file a Notice of Intent (NOI) to discharge, develop and implement a SWPPP, perform facility inspections, monitor stormwater, etc.

   Other commercial, industrial, or municipal facilities, such as waste transfer stations or sludge disposal sites, which have the potential to discharge to a MS4, are subject to municipal stormwater requirements (i.e. ordinances protecting the MS4). These facilities must implement stormwater best management practices to minimize discharges to the MS4. All municipally-owned or operated

facilities should be evaluated to ensure compliance with municipal and state stormwater requirements as applicable.

4. Site plan review and inspection requirements apply to construction projects disturbing one acre or more, or less than one acre if part of a larger common plan of development, except for sites which receive a stormwater permit exemption under 40 CFR 122.26(b)(15)(i)(A) or (B).

RESPONSE TO PUBLIC COMMENTS

City of Phoenix
Authorization to Discharge Stormwater from a Municipal Separate Storm Sewer System to Waters of the United States under the Arizona Pollutant Discharge Elimination System Program

Permit Number:	AZS000003-2008
Applicant:	City of Phoenix 200 West Washington Street Phoenix, Arizona 85003-1611
Permit Action:	Final Permit decision and response to comments received on the draft City of Phoenix Permit for Discharge to Waters of the U.S. public noticed on June 26, 2008.
Prepared By:	Arizona Department of Environmental Quality Surface Water Section 1110 West Washington Street, 5415A-1 Phoenix, Arizona 85007 602-771-4508
Date:	February 2009

Administrative Record

As a regulated Phase I Municipal Separate Storm Sewer System (MS4), the city of Phoenix is required to apply for and obtain coverage to discharge pollutants to Waters of the United States (Waters of the U.S.) under an Arizona Pollutant Discharge Elimination System (AZPDES) permit (Arizona Revised Statutes 49-255.01). Prior to issuing this AZPDES permit, the City was discharging under an administratively continued permit issued by the U.S. Environmental Protection Agency (U.S. EPA).

As part of the process for re-issuing the AZPDES permit to Phoenix, ADEQ participated in a series of meetings over the course of almost a year with the Coalition of Arizona's Phase I Municipal Separate Storm System Communities (Coalition). The Coalition consisted of the cities of Glendale, Phoenix, Mesa, Scottsdale, Tempe, Tucson and Pima County. Maricopa County and the Arizona Department of Transportation also participated. The draft permit, which went through considerable change as a result of these discussions and negotiations, was the result of this process.

In accordance with A.A.C. R18-9-A907(A)(1), the draft permit was issued for public notice and comment. The public comment period remained open for 45-days and closed on August 11, 2008. A total of eight persons submitted comments on the draft permit. Those persons include: the cities of Glendale, Phoenix, Mesa, Tempe, and Tucson; the Coalition (submitted by Scottsdale); and joint comments submitted by David Kimball, III, Esq. on behalf of the Arizona Chamber of Commerce and Industry, and Greater Phoenix Chamber of Commerce. Maricopa County submitted a separate letter indicating it endorses by reference the comments submitted by the Coalition.

This document summarizes and responds to those significant comments received on the draft permit in accordance with A.A.C. R18-9-A908(E)(1).

Note that many commenters made the same or similar comments. Persons making the same or similar comment are identified after each comment below.

A. GENERAL COMMENTS

A.1 Comment

Delete the reference to Article 10, Chapter 9, Title 18 of the Arizona Administrative Code (A.A.C.) as that biosolids article it is not applicable to this permit..

Phoenix Tucson

Response

The reference to Article 10 (biosolids rule) was deleted.

A.2 Comment

ADEQ should not finalize the draft permit without further stakeholder Involvement. ADEQ has not held any public meetings to discuss the Draft Permit beyond meetings with the City. The involvement of a broad group of the community representing various concerns would allow ADEQ to anticipate and address the Draft Permit's impacts beyond only those affecting the City. ADEQ could administratively extend, for an additional 30 days, the City's current MS4 permit, to allow for interested members of the community to participate in a stakeholder process for renewing the City's MS4 permit. Following this 30-day period, ADEQ should publish a revised version of the Draft Permit for public comment.

David Kimball

Response

The permitting process for an individual AZPDES permit involves discussions with the applicant, but does not typically involve public meetings prior to publication of a draft permit. The public involvement requirements are in A.A.C. R18-9-A908, which specifies the Director may decide to hold a public hearing if significant public interest exists and a hearing is requested during the comment period. Although we acknowledge your comment, ADEQ did not receive any requests for a public hearing on this permit.

As mentioned above, prior to issuing the draft permit and in addition to discussions with Phoenix, ADEQ participated in a series of discussions with Phase I Coalition (consisting of ADOT, Glendale, Phoenix, Mesa, Scottsdale, Tempe, and Tucson and the counties of Pima and Maricopa) representatives to discuss the permit language, conditions, and requirements.

No changes were made to the permit as a result of this comment.

A.3 Comment

Regulatory references for the permit cite Title 49, Chapter 2, Article 3.1. This citation should include Articles 1 and 2 of the statute which contain important definitions and other provisions, such as TMDLs, that are applied in the permit.

Tucson

Response

The permit authorizing page provides the legal authorities relating to issuance of an AZPDES permit, not necessarily all applicable laws. This is the same language standardized for use in all AZPDES permits.

No changes were made to the permit as a result of this comment.

A.4 Comment

Following the Permittee's name and address is a phrase that states, "...is authorized to discharge stormwater from the municipal separate storm sewer system...." To be consistent with the MS4 permit issued for ADOT (AZS000018-2008), ADEQ should also include the phrase, "and other discharges specified in this permit." The ADOT permit recognizes and lists certain non-stormwater discharges as authorized by their permit. ADEQ should take a similar approach with this permit.

Tucson

Response

It is noted that ADOT is a "non-traditional" MS4 in that it is not defined by municipal boundaries or population, but does meet the definition of a municipality pursuant to 40 CFR 122.2. As such the individual ADOT permit, which addresses stormwater issues statewide is quite different than Phoenix's individual stormwater permit. The Phoenix permit does not specify other authorized discharges besides stormwater and therefore, the suggested language would not be applicable.

No changes were made to the permit in response to this comment.

A.5 Notice of Change

Since the time the draft permit was issued for public notice and the final permit issued, Arizona's revised surface water quality standards (A.A.C. Title 18, Chapter 11, Article 1) rule was adopted and became effective. Therefore, the term "unique waters" was replaced with "outstanding Arizona waters" and the reference to Arizona's 2004, 303(d) list was replaced with the 2006/2008, 303(d) list.

B. PERMIT PART 1

B.1 Comment

ADEQ should define "waters of the U.S.," which is a core element of the Permit, and should identify the specific water bodies to which the City is authorized to discharge.

Phoenix

Response

Permit section 10 was revised to include a reference to the federal definition of waters of the U.S. found in 40 CFR 122.22.

This permit authorizes Phoenix to discharge stormwater from its municipal separate storm sewer system to all waters of the U.S. (see Permit Part 1.1), within the terms and conditions of the permit. As such, it is not necessary to specifically identify individual water bodies to which the City is authorized to discharge.

No changes were made to the permit based on this comment.

C. PERMIT PART 2

C.1 Comment

Delete or revise the phrase to "control pollutant discharges" in the first paragraph as it is inaccurate and redundant.
Phoenix

Response

For clarity, the phrase was revised to read "...to control the discharge of pollutants..." in the section 2.0.

C.2 Comment

Subsections 2.1 through 2.7 are inconsistent with the "legal authority" requirements promulgated at 40 CFR 122.26(d)(2)(i)(A) through (F). ADEQ is attempting to impose expanded "legal authority" requirements on the City and has therefore run afoul of the statutory prohibition to develop and implement an AZPDES program consistent with and no more stringent than the requirements imposed on the City by EPA under the NPDES permit program. As such, delete subsections 2.2 and 2.7 and revise the remaining subsections to be consistent with 40 CFR 122.26(d)(2)(i)(A) through (F).

Phoenix Scottsdale Tempe Mesa
Tucson Glendale Maricopa County
David Kimball

Response

Discharges from small construction sites (as defined in 40 CFR 122.26(15)) to the Permittee's storm sewer system represent a potential source of pollutants to waters of the U.S. In order to have adequate legal authority (i.e., controls) to fully implement the requirements of Section 402(p) of the Clean Water Act, this permit requires the Permittee to establish and maintain the legal authority specified in Permit Part 2 to reduce the discharge of pollutants to the maximum extent practicable.

Additionally, 40 CFR 122.26(d)(2)(i) anticipates additional authority may be needed to fully implement the requirements of this rule, as demonstrated by identifying paragraphs (A) through (F) to be minimum requirements. This rule is again consistent with Section 402(p)(3)(B) of the CWA which states "...permits for discharges from municipal storm sewers...shall require controls...and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants."

It is also noted that 40 CFR 122.26(d)(2)(vi)(D) requires the permittee to include a description of a program to implement and maintain structural and non-structural BMPs (i.e., controls) to reduce stormwater runoff from constructions sites to the MS4 and does not limit this to "large" construction sites. In order to implement the provisions of this permit, the MS4 will need the authorities cited in the draft and permit.

Finally, appropriate legal authority is a key component in the MS4's ability to establish post construction controls to control pollutants from new development and significant redevelopment projects.

No changes were made to the permit based on this comment.

C.3 Comment

Delete the word "adequate" from the first line. This term is vague and the list that follows this paragraph should serve to identify what constitutes acceptable authorities.

Tucson

Response

ADEQ concurs that the use of 'adequate,' although consistent with language in 40 CFR 122.26(d)(2)(i), is not necessary for understanding the requirements. The term has been removed as requested.

C.4 Comment

In the second line, use of the term "discharges" is not consistent with the permit's definition. A discharge involves adding a pollutant to a water of the US, not to an MS4. The proper term to use here is "release of pollutants." ADEQ has used this terminology in

the similar section in the ADOT permit, and the Phoenix permit should be worded consistently.

Tucson

Response

When used in this context, "discharge" assumes the dictionary definition. Moreover, the use of the term "discharge" is consistent with its usage in 40 CFR 122.26(d)(1)(ii) and (d)(2)(i), et seq. which requires the permittee to establish legal authority to regulate the discharge (or release of pollutants) to the permittee's storm sewer system. Thus this term is not being changed in the permit. However, Section 10 (Definitions) was revised to provide clarity.

C.5 Comment

Section 2.3 – 40 CFR 122.26 only requires the permittee to prohibit illicit discharges. The permit requires the permittee to extend legal authority to prohibit illicit connections. This requirement is more stringent than the requirements established under the CWA, which is expressly prohibited by 49-255.01. Delete this section from the permit.

Mesa

Response

The prohibition of illicit connections is a fundamental component of section 402(p)(3), which requires permittee to effectively prohibit non-stormwater discharges into the storm sewer system and is also integral to the requirement for detection and elimination of illicit discharges (40 CFR 122.26(d)(2)(iv)(B)).

EPA's National Urban Runoff Project (NURP) studies highlighted the significance of pollutants from illicit entries into urban storm sewer (EPA, 1983). Such entries may be evidenced by flow from storm sewer outfalls following substantial dry periods. Such flow, frequently referred to as "baseflow" or "dry weather flow," could be the result of direct "illicit connections" as mentioned in the NURP final report (EPA, 1983), or could result from indirect connections (such as leaky sanitary sewer contributions through infiltration). Any adequate Illicit Discharge and Detection Elimination program will have elimination of illicit connections as a core component and thus appropriate authorities are needed.

No changes were made to the permit based on this comment.

D. PERMIT PART 3

D.1 Comment

Subsection 3.3 prohibits the discharge of non-stormwater, including De Minimus discharges. Yet, the City's current NPDES MS4 permit and 40 CFR 122.26(d)(2)(iv)(B)(1) allows certain categories of non-stormwater discharge unless the MS4 identifies that non-stormwater discharge to be a source of pollutants to waters of the U.S. This contravenes the statutory prohibition on ADEQ to develop and implement an AZPDES permit program consistent with and no more stringent than the requirements of the CWA. Many of these non-stormwater and De Minimus discharges are benign as they are not significant sources of pollutants and the use of best management practices (BMPs) can fully address them. ADEQ should allow the City to identify which non-stormwater discharges it needs to address and to set BMPs for those discharges in its Stormwater Management Program (SWMP). Such an approach would be consistent and reconcilable with ADEQ's Construction General Permit and the draft Arizona Department of Transportation (ADOT) permit recently public noticed.

Phoenix Scottsdale Tempe Mesa
Tucson Glendale Maricopa County
David Kimball

Response
The cited federal regulation is commonly misinterpreted. To clarify the intent of this provision, commenters are referred to the November 16, 1990 preamble to the MS4 requirements. From review of the history (see specifically FR 55 47995, 47996 and 48037on this issue), it is clear that EPA considered the option of including certain non-stormwaters (as those typically handled under the DeMinumus permit) within the definition of "storm water." However, EPA ultimately rejected this as inconsistent with the provisions of the CWA, and noted that these non-stormwater discharges are independently subject to permitting. EPA stated *'this rulemaking is not an appropriate forum for addressing the appropriate regulation under the NPDES program of such non-stormwater discharges*".

However, the rule at 40 CFR 122.26(d)(2)(iv)(B)(1), was drafted in response to Section 402(3)(p)(3)(iii) of the CWA, which directs that MS4s are required to "effectively prohibit" non-stormwater discharges to their systems. EPA recognized the challenges that MS4s could have in eliminating all of these common discharges. As a result EPA specifically clarified, in the context of the required illicit discharge detection and elimination (IDDE) provisions, that MS4s will generally *"not be held responsible for effectively prohibiting"* certain named non-stormwater discharges (unless they are determined to be a significant source of pollutants). This rule has context *only* within the IDDE program. It was never the intention that such discharges be considered 'permitted' within the scope of the MS4 permit.

Currently, there is a state AZPDES permit that is designed to address these types of discharges, the DeMinimus General Permit (DGP). The City of Phoenix permit is consistent with the intent of the federal provisions in that non-stormwater discharges are not 'permitted' under the MS4 permit; rather, the DGP or another AZPDES permit is the appropriate mechanism for legal discharge of such non-stormwaters. However, the City is not required to 'effectively prohibit' such discharges within the IDDE program unless determined a significant source of pollutants. (Note the preamble also clarified that the Director "*may require municipalities to prohibit or otherwise control any of these types of discharges where appropriate.*")

No changes were made to the permit based on this comment.

D.2 Comment
Under Section 3 ADEQ expressly states that the City is not authorized to discharge to impaired or unique waters except as specified in Section 6. ADEQ states in 3.5 that this applies to waters "on Arizona's 2004 303(d) and Other Impaired Waters List." ADEQ should clarify the scope of this limitation. The 2004 303(d) Report lists all non-attaining waters. Not all of those waters are appropriately categorized as "impaired." Some may be addressed under Category 4(b) of the CWA 303(d) list, meaning that an effective remediation method has been, or is being, implemented. Additionally, many waters are not attaining surface water quality standards due to natural background. As such, ADEQ imposing increased monitoring and reporting requirements on discharges to all waters listed on the 303(d) report, as provided under Section 6, unnecessarily burdens operators in instances where they are either already cleaning the water or where the receiving water exceeds water quality standards due to natural conditions ADEQ should delete references to "Other Impaired Waters" and focus only on Category 5 impaired waters on the 303(d) list.

David Kimball

Response
As noted the permit expressly states the scope of the limitation in Section 3.5. The commenter is correct that 'impaired' is not the technically correct terminology for all the 303(d) List waters. Notwithstanding, such waters are noted as not attaining water quality standards for a variety of reasons and have no additional assimilative capacity to receive additional loads of the pollutant(s) of concern. As specified, discharges to such waters are limited to those made in accordance with Section 6.0 of this permit.

No changes were made to the permit based on this comment.

D.3 Comment
The permit does not address discharges resulting from fire fighting activities. However, the federal definition of illicit discharge, as provided and referenced in Section 10.0 of this permit, specifically exempts these types of discharges.

As such, a provision for non-stormwater discharges resulting from fire fighting activities must be included under this section of the permit (see further comment on Section 3.3 below). This section should be revised as follows: "... of this permit excepting those related to fire fighting activities"

Mesa

Response
The definition of illicit discharge in the permit was revised to allow for discharges resulting from fire fighting activities where such discharges are not identified to be a significant source of pollutants to waters of the U.S.

D.4 Comment
Some non-stormwater discharges do not require permit coverage as detailed in R18-9-A902(G). This section should be further revised to allow for non-stormwater discharges from these sources.

Mesa

Response
As indicated in the comment, discharges identified in A.A.C. R18-9-A902(G), (examples include agricultural return flow and discharge of dredge and fill material regulated under section 404 of the CWA) are not subject to the AZPDES program. This permit does not identify any of those excluded discharges as requiring AZPDES coverage; therefore, it is not necessary to revise the permit to allow for such discharges.

No changes were made to the permit in response to this comment.

E. PERMIT PART 4

E.1 Comment
Arizona's Surface Water Quality Standards (SWQS) should not be a standard or limitation in the Permit.

a. *The reference to "applicable surface water quality standards" is vague and unspecific. This leaves the Permit open to arbitrary interpretation about which of the standards may apply. For example, ADEQ's SWQS rules are unclear about whether the standards protecting recreational uses apply during storm events. ADEQ stated in the Notice of Final Rulemaking for the current SWQS that "the*

current surface water quality standards are not specifically designed to address wet weather flows or storm water discharges" and that "the applicability of surface water quality standards to storm water discharges is an important problem that should be addressed through a stakeholder process" (AAR, March 29, 2002, Volume 8, Issue #13, p. 1345). Another statement by ADEQ in that response to comments recognizes the difficulties in reconciling surface water standards with the "first flush" sampling approach in the stormwater program: "Moreover, ADEQ cannot adopt additional rules that would further define the applicability of water quality standards to storm water discharges (for example, "first flush" standards) in a Notice of Final Rulemaking when the subject was not addressed in the proposed rules." Because stormwater discharge was not considered in establishing the agency's rules on SWQS, it is improper for ADEQ to apply standards adopted in that rulemaking to the City's stormwater program through the Permit.

Phoenix Scottsdale Mesa
Tucson Glendale

Response
To the knowledge of ADEQ and EPA Region IX, development of surface water quality standards that apply only to stormwater is nationally unprecedented. In the cited comments, ADEQ acknowledges some of the challenges relating to the nature of stormwater. However, ADEQ has been clear that the promulgated suface water quality standards (SWQS) are the legal standards that apply to the waterbody to which persons are discharging. Each waterbody should be evaluated for its designated uses, and the applicable standards determined based on those uses. In the case of discharges composed of stormwater, ADEQ considers the acute (ephemeral, edw, or aquatic and wildlife as applicable) standards to apply. All waters, except canals, are protected for at least incidental contact, or PBC (partial body contact) uses. This is the WQS that is to be the reference for discharges unless the waterbody is designated as FBC (full body contact).

No changes were made to the permit in response to this comment.

b. *The only standards that may be relevant to stormwater are those criteria set for Aquatic and Wildlife Ephemeral. Stormwater should not be compared to Partial Body Contact (PBC) standards because the PBC criterion assumes recreational uses as the exposure pathway. ADEQ excludes canals from the PBC standards with a presumption that recreational use of flows in canals is unlikely. A similar presumption must apply to stormwater. Stormwater flows are not typically subject to the routine recreational use presumed in establishing PBC exposures, and the City, as well as other MS4s, actively discourages boating and wading in stormwater flows.*

Phoenix

Response
ADEQ understands that MS4s are not encouraging recreation in stormwater flow. (Nonetheless, it is not unusual to see persons recreating in stormwater.) Notwithstanding this, if the PBC standard applies to the waterbody, it is the legally applicable WQS. See also response to (a) above.

No changes were made to the permit in response to this comment.

c. *The Permit requirements regarding SWQS are effluent limits that are not authorized by federal regulation. The CWA requirements for municipal discharges in section 402 (p)(3)(B)(iii) state that permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable." This same section, section 402 (p)(3)(A), requires industrial permits to "meet all applicable provisions of this section and section 1311 of this title." Section 1311 is effluent limits. Had it been Congress's intention to apply effluent limits to municipal discharges, they would have extended coverage of section 1311 to municipal discharges as well. Congress purposefully did not. The use of SWQS in the Permit as de facto effluent limits is more stringent than the CWA's NPDES stormwater requirements and as such is prohibited.*

Phoenix
Scottsdale

Response
First, the SWQS are not effluent limits in this permit. If they were, it would be a violation of the permit (and the CWA) to discharge above the standards. Also, although MEP is a specified standard for MS4s in the CWA, courts (including 9th Circuit) have held that EPA/permitting agencies have discretion to impose discharge limitations based on SWQS in MS4 permits. Some states have chosen to do so; to date, ADEQ has not chosen this approach. This permit requires comparisons with the standards and potential follow-up actions, but it is not a violation to discharge above the pollutant concentrations. ADEQ also notes that EPA reviewed the language relating to water quality standards. ADEQ made some changes to the pre public notice draft in response to EPA's comment on this section of the permit.

No changes were made to the permit in response to this comment

E.2 Comment
ADEQ should not use the language in paragraph 2, subsection 4.2 because it departs dramatically from language ADEQ agreed to in the agency's discussions with Arizona's Phase I MS4 entities. ADEQ committed to using the following language:

> *If monitoring data collected under this permit show a recurring (more than once) condition at an outfall, the Permittee shall investigate and attempt to identify potential source(s) of the pollutant(s). When source(s) are identified, the Permittee shall determine if additional BMPs or other actions are practicable to improve the quality of discharges from the MS4.*

Response
As noted above, ADEQ revised language in this Section as a result of EPA comment over concerns the draft language may be interpreted as not requiring additional activity to meet water quality goals (EPA, May 2008). Although ADEQ has been delegated the NPDES program in Arizona, EPA retains authority to object to a condition in any permit. ADEQ agrees that EPA's proposed language is clearer and more enforceable.

No changes were made to the permit in response to this comment

The problems with the new approach in this subsection of the Permit include the following:

a. *A SWQS exceedance doesn't necessarily mean that a BMP has failed. Tying SWQS exceedances and BMP adjustment in the permit incorrectly assumes that*

there is a direct correlation between them. This is an unproven and unrealistic assumption.

Phoenix Tucson Glendale

Response
The purpose and intent of BMPs, as defined in Permit Section 10.0, is to prevent or reduce the discharge of pollutants to waters of the U.S. (whether the pollutant causes a water quality exceedance or not). While a SWQS exceedance may not necessarily suggest a particular BMP failed, it does suggest that BMP improvements (other and/or additional BMPs), or actions are necessary to reduce pollutant concentrations such that they do not continually or repeatedly cause or contribute to an exceedance of a SWQS.

No changes were made to the permit based on this comment.

b. *The phrase "attempt to" should precede "identify potential source(s) of the pollutant(s)" because it is extremely difficult to pinpoint and identify specific sources of stormwater pollution. For example, pollutant sources can be sporadic, intermittent, dispersed, masked by other sources, or simply nonpoint in nature. It is inappropriate to require identification of sources when in many instances this will simply be impossible. Indeed, in most instances, the best the City can do is to attempt to find the source.*

Phoenix Tucson Glendale Mesa Tempe

Response
The Language in Permit Section 4.2 was revised to read "...the Permittee shall investigate and *make all reasonable efforts to* identify potential source(s) of pollutants...."

Pursuant to 40 CFR 122.26(c)(iv)(B), incorporated by reference in state rules, the management program must include a description...to detect *and remove*...illicit discharges and improper disposal to the storm sewer. ADEQ understands that sources may not be identifiable 100% of the time. In such cases, ADEQ envisions the City would document its efforts to identify potential source(s) of the discharge. In this case, ADEQ and the City would need to evaluate if additional actions were appropriate.

Also, per Section 5.0 (Stormwater Management Program), the City is required to continue to implement and maintain a SWMP that details the City's Illicit Discharge Detection and Elimination (IDDE) program, including how illicit discharges will be investigated and eliminated.

ADEQ suggests the City refer to the document "**Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments,"** when preparing the updated SWMP. This document is available for download at the following website:

http://cfpub2.epa.gov/npdes/docs.cfm?program_id=6&view=allprog&sort=name#iddemanual

c. *ADEQ removed from an earlier version of the draft Permit the sentence that states, "[w]hen source(s) are identified, the Permittee shall determine if additional BMPs or other actions are feasible to improve the quality of the discharges from the MS4." This sentence makes it clear that the City will act further only when*

sources are identified. Instead, the draft Permit requires BMP assessment and additional BMPs even when sources of the pollutant are unknown. The City should not be required to act when no source can be found. Requiring such is a waste of time and resources, and is clearly arbitrary and capricious. The City should only be required to target identified sources in order to be efficient and to optimize effectiveness of its program. ADEQ should retain this important sentence.

Phoenix Tucson Glendale

Response
This change was also requested by EPA because, as described in the preamble to the Phase II rules and various EPA guidance documents, the stormwater program relies on an iterative process to achieve MEP. There may very well be feasible actions that a permittee could take to mitigate high discharges of a pollutant even if specific sources are not identified (i.e, use of buffer strips, detention basins, redirection of flow expanded outreach efforts, etc.). As owner of the system and as part of MEP, the City must make all reasonable efforts to identify (and eliminate) potential source(s) of pollutants discharged.

No changes were made to the permit in response to this comment.

d. *Including the phrase "likely to achieve water quality standards" as the benchmark for BMP evaluation is more stringent than the federal regulatory goal of pollutant reduction to the maximum extent practicable (MEP) and establishes an inappropriate objective to expect from stormwater BMPs. ADEQ should remove this phrase because it is not authorized by statute or rule and it is contrary to the legislative proscription.*

Phoenix Tucson Glendale

Response
ADEQ does not agree that water quality standards as a "benchmark" for BMP performance is either inconsistent with or otherwise more stringent than the regulatory framework or goals. EPA establishes in various documents (guidance, rule making, policy, etc.) the iterative process using BMPs, assessment, and refocused BMPs leading toward attainment of water quality standards is consistent with and implements section 301(b)(1)(C) of the Clean Water Act (see Federal Register 64, 68731 and 68753, December 8, 1999). It is also noted that, pursuant to Arizona Administrative Code R18-11-102, surface water quality standards apply to all surface waters.

No changes were made to the permit in response to this comment

e. *In the first sentence of subsection 4.4, ADEQ should replace the general term, "pollutants," with a more specific reference to "that pollutant." This wording change would further clarify that the feasible actions are targeted to the pollutant for which the recurring exceedance was observed.*

Phoenix Tucson Scottsdale

Response
Permit Section 4.4 was revised, as suggested.

E.3 Comment

ADEQ should delete footnote 1 of Section 4.0 because it requires the City to report results that are below the limit of quantification (LOQ).

a. *The City should not be required to report data that cannot be quantified by laboratory analysis. Data below the LOQ has no meaning in a regulatory context. To require a value to be reported, even though it is "flagged," ascribes false meaning to the data. ADEQ should not require the City to report any information about the testing result other than the pollutant was not detected above the LOQ. This is consistent with the enforcement subsection of the Surface Water Quality Standard Rules, A.A.C. R18-11-120(B), which limits ADEQ to enforcing standards only when a concentration is at or above the practical quantification limit.*

Phoenix Tucson Scottsdale Mesa
Tempe Maricopa County

Response

Section 4 requires the permittee to report all data, including results below the LOQ. As stated in Footnote 1, such data is not considered to be an 'exceedance' or to definitively 'contain a pollutant above a SWQS' for the purposes of this permit. Also, although R18-11-120(B) has no relevance to permitted discharges, ADEQ does not intend to use 'flagged' data below an LOQ as a basis for enforcement.

While results reported below the LOQ are not included in pollutant loading estimates, the data provides the City and ADEQ with a qualitative assessment of pollutants discharged from the MS4, particularly when the same pollutant is reported (either above or below) the LOQ for multiple monitoring events.

No changes were made to the permit in response to this comment.

b. *It is unnecessary to report results that are below the LOQ as this data is kept on file. If ADEQ needs to review "flagged" analytical results for some special reason, the complete detailed lab report is available because the City is required to retain all laboratory records.*

Phoenix Tucson

Response

While data is required to be maintained by the Permittee, ADEQ would not necessarily know if a "special reason" to review the flagged data existed. Including the flagged data in the annual report provides a more complete data assessment for the Permittee and the Department (see also Response E.3.a).

No changes were made to the permit in response to this comment.

c. *Subsection 7.5.4.3 states "[f]or results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods." Subsection 9.2.4 requires a certification stating that "....the information submitted is, to the best of my knowledge and belief, true, accurate, and complete." Since subsection 4.2 requires reporting of inaccurate data, and subsection 7.5.4.3 specifically states that analytical work that does not meet quality control standards will not be considered valid, this certification cannot be signed for any results in which flagged data is reported.*

Phoenix Glendale

Response
Results that are flagged are not used in quantitative manner (e.g., estimating pollutant loads from the MS4), unless otherwise indicated by an approved data validation procedure. Flagged data may indicate a variety of issues including matrix interference, improper sample preservation, or sample hold time exceedance, etc., and the presence of a flag may or may not limit the use of the data.

In the event flagged data are determined to not be valid, the information may be a useful qualitative assessment tool and is therefore required to be reported in the annual report.

It is noted that when signing the certification (e.g., for DMRs and annual reports) the Permittee is not affirming invalid results to be valid. Rather, the Permittee would be affirming the results and data qualifiers identified in the laboratory report.

. No changes were made to the permit in response to this comment.

E.4 Comment
Permit sections 4.0 and 7.0, and subsection 8.3.c and other areas of the Permit, require or refer to sampling of stormwater discharging from the MS4 to waters of the U.S. 40 CFR 122.26(d)(2)(iii)(A) & (D), allow monitoring to be conducted at outfalls, at field screening points, or even at in stream stations that are not outfalls. Regulations don't require monitoring precisely at the outfall. Field screening points can often be more representative than outfalls for monitoring land use impacts that are targeted by stormwater BMPs. The Permit should not preclude monitoring at points other than outfalls. In many cases, Arizona's MS4s conduct monitoring at field screening points rather than at outfalls to waters of the U.S. to have better control over the land uses in the drainage area of the monitoring point. The intent of this approach is to characterize stormwater quality from specific land uses so that the resulting data could be used to assess the effectiveness of BMPs, targeting activities associated with specific land uses. If the Permit does not allow field screening points, monitoring data will no longer reflect trends from specific land uses and associated activities, and it will not be useful for evaluating BMP effectiveness. Furthermore, established monitoring locations of Arizona's MS4s were approved by EPA and represent more than 10 years of data collection. Relocating long-standing monitoring points to outfall locations will require substantial expense and program modification.

Phoenix Scottsdale Tucson

Response
MS4 representatives were advised in a meeting with EPA representatives even before ADEQ assumed delegation in December 2002, that monitoring at outfalls was intended in the renewal permits. As reported by MS4s and in the data that has been seen, the monitoring of 'land uses' has not provided any particularly meaningful distinctions. Additionally, monitoring of discharges from the MS4 system is more consistent with the NPDES program. ADEQ considers it appropriate to evaluate what is actually being discharged from the system into the waters of the U.S. In the case of the Phoenix draft permit, which is the subject of the comments, the monitoring points have been, and continue to be, at outfalls. Monitoring of pollutants at outfalls is consistent with the objectives of the monitoring program to estimate pollutant loads to waters of the U.S.

Note also the permit does not preclude monitoring at points other than outfalls. Field screening is particularly useful in the IDDE program for determining illicit discharges. The permit allows for (and the Department encourages) additional monitoring (in stream, at field screening points, etc.) to be conducted at the discretion of the Permittee (see Permit Section 7.9).

The permitting authority has some discretion regarding monitoring locations; 40 CFR 122.26(d)(2)(iii)(A) requires quantitative data from between 5 and 10 outfalls *or* screening points and indicates that the Director shall designate the monitoring points in the permit.

No changes were made to the permit in response to this comment.

E.5 Comment

Section 4.1 should clarify what narrative limitations are applicable to waters of the U.S receiving discharges from the MS4. Several of these limitations are impossible to address with stormwater flow and could result in useless but costly investigations and BMP evaluations.

Tempe

Response

Narrative surface water quality standards are established in A.A.C. R18-11-108 and apply to waters of the U.S. The permittee must reduce, to the maximum extent practicable, pollutants that cause or contribute to a violation of the narrative standards, just as the permittee must do for numeric standards.

No change was made to the permit in response to this comment.

E.6 Comment

Section 4.2 - measuring "first flush" pollutant contributions at the outfall is not the same as measuring pollutants in-stream. Outfall monitoring cannot measure the discharge effect on the receiving water or whether the discharge causes or contributes to SWQS "exceedance." Furthermore, the Department has not established that SWQS are in any way applicable to stormwater. Outfall data cannot possibly be used to identify causes of exceedances.

Tempe

Response

Outfall monitoring, including the "first flush" portion is not intended to be the same as measuring pollutants in-stream. Rather, outfall monitoring is intended to provide information necessary to accomplish several objectives, including information for estimating pollutant loading (see subsection 7.4) and assisting with the identification of illicit discharges. "First flush" contains a significant part of the pollutant load, and for this reason can be of use in an MS4 IDDE program. Samples that do not include a first flush component would be lacking information about pollutant discharge.

Moreover, the Department considers that outfall monitoring data can, and has been used to identify causes or contributors of water quality exceedances. For example, nutrient loading data from the outfall monitoring program can be used to assess the contribution of nutrients to the receiving water.

E.7 Comment

How will the Department define the terms "feasible actions" and "timely implementation" to limit their subjectivity?

Tempe

Response

Consistent with revisions to subsection 4.2, the terms "feasible" and "timely" were removed from subsection 4.4. Subsection 4.4 was revised to read "...that *additional BMPs* or actions within the control of the Permittee that may be taken to reduce pollutant(s) identified as recurring exceedance...."

E.8 Comment

Section 4.2 (paragraph 2, sentence 2) requires the permittee "... to evaluate the effectiveness of existing BMPs on the pollutant of concern." It is unclear if the permittee must do this on a system-wide basis, at the particular outfall where the condition continues, or if the evaluation should be at the identified source (when identification is possible). The evaluation of BMPs should address the source of the specific pollutant not necessarily the pollutant itself (i.e. some level may be background), at the location of the source, in order to meet maximum extent practicable at the outfall. This section should be revised as follows: "... effectiveness of existing BMP(s) available at the identified source of ~~on the~~ pollutants(s) of concern in an attempt to reduce the discharge of ~~and~~ pollutants ~~reduction likely and to achieve water quality standards~~ at the outfall to the maximum extent practicable."

Mesa

Response

The intent of the permit is not to limit these efforts to a particular outfall or to require the permittee to evaluate the entire system when this may not be necessary. Rather, the permittee is to consider the circumstances and make a determination whether a system wide evaluation is necessary, or if a limited evaluation of the drainage area(s) contributing to one or more outfalls is sufficient to meet the permit requirement.

No changes were made to the permit in response to this comment.

E.9 Comment

Section 4.4 (last sentence) – The conditions set forth for re-opening a permit are adequately detailed in State statute. Including these conditions in the permit itself is unnecessary. This sentence should be deleted. In the absence of addressing this issue, this should be deleted from this section and relocated to section 9.16.

Mesa

Response

As indicated in the comment, conditions for re-opening a permit are established in Arizona rule (A.A.C. R18-9-B906). ADEQ is specifying this condition for reopening and modifying the permit in subsection 4.4 for clarity.

No changes were made to the permit in response to this comment.

F. PERMIT PART 5

F.1 Comment

Replace "SWPPP" with "SWMP" in the final sentence of subsection 5.1 and item number 2 in subsection 5.5.

Phoenix Tucson

Response

The term "SWPPP" was replaced with "SWMP" at the referenced locations.

F.2 Comment

In subsection 5.2, delete the last sentence. This requirement is vague because it is not clear what additional practices would be necessary to meet this condition. Also, it is inconsistent with CWA requirements to require an MS4 to "minimize" the release of pollutants. Instead, we suggest the term "reduce."

Phoenix Glendale Tucson Tempe

Response

The sentence is not being deleted, however, as suggested the term "minimize" was replaced with the term "reduce" in Section 5.2.

F.3 Comment

Revise subsections 5.3 and 5.4 to allow the City to submit its SWMP within one year of the permit's effective date or with the first annual report, not both.

Phoenix Mesa Tucson

Response

The permit was revised to specify the updated SWMP is to be submitted to ADEQ within one year of the issuance date of the permit.

F.4 Comment

In the first sentence of subsection 5.5, change the language to read, "...effectiveness of the program in reducing discharge of pollutants from the MS4 to the maximum extent practicable." This change makes the wording consistent with that in subsection 5.4 and with CWA requirements for MS4s. Additionally, replace the parenthetical "for special events" with "event-driven" to be consistent with the draft ADOT permit.

Phoenix Tucson

Response

Incorporating the suggested changed would be inconsistent with the fundamental permit requirement for the MS4 to identify and eliminate illicit discharges to the permittee's storm sewer system in addition to reducing discharges of pollutants from the MS4. Therefore, the suggested change was not incorporated into the permit. However, the phrase "special events" was replaced with "event driven" in subsection 5.5.2, as requested.

F.5 Comment

Subsection 5.5 requires prior approval by ADEQ to replace an ineffective practice or control with an alternate practice or control. Additionally, subsection 5.6 requires a permit modification prior to implementing revisions to the SWMP or measurable goals included in Appendix A. Neither of these permit sections provide a timeframe for review of the request or permit issuance by ADEQ. We believe there should be a timeframe included in each of these permit sections to enable the implementation of more effective controls

and practices within a reasonable timeframe. Another impact of requiring a permit modification prior to implementing revisions to the SWMP will be decreased flexibility for the City to promote effective modifications to their SWMP due to added expense for permit revisions and additional time that the permit revisions will require.

Phoenix Glendale Tucson
David Kimball

Response
Subsections 5.5.1 through 5.5.3 do not require prior ADEQ authorization. These changes are only required to be documented in the subsequent annual report. Subsection 5.5.4 (Replacement of Existing BMPs) requires prior ADEQ approval before the permittee can replace an ineffective practice or control with an alternate practice or control. The Department anticipates working with the permittee when the City proposes to replace existing BMPs to allow change without undue delay. However, we are not including a timeframe for ADEQ in the permit.

No changes were made to the permit in response to this comment.

F.6 Comment
Subsections 5.6 and 4.2 seemingly conflict. Subsection 5.6 requires a demonstration that a proposed change "...will not cause or contribute to a violation of any applicable surface water quality standard." Please define what constitutes a violation of an applicable SWQS under the Permit in the first place. Subsection 4.2 specifically states that "[a] pollutant concentration that is greater than the applicable surface water quality standard is not considered a violation of this permit when the Permittee is in compliance with the conditions of this permit."

Phoenix Glendale

Response

For clarity subsection 5.6 has been revised to remove the word "violation" and replace it with "exceedance."

F.7 Comment
The concept of measurable goals [subsection 5.2] is workable in many situations, however not all goals will or should have measurements attached. For those goals that are measured, ADEQ should work closely with the permittee so that reasonable measurements are established. Additionally, flexibility should be allowed to address uncontrollable circumstances that will affect meeting these goals.

The incorporation of Appendix A into the permit results in strict and inflexible management of a program intended to have flexibility. ADEQ should consider making Appendix A a resource or guidance document for the formation of a system-specific SWMP.

The last sentence of this section inappropriately adds additional open- ended requirements and should be removed completely.

Tempe

Response
Measurable goals are an important tool for the MS4 and ADEQ to gauge permit compliance and program effectiveness. Additionally, the lack of measurable goals has been a national criticism of the stormwater permitting program. ADEQ agrees some

goals may not be easily measured, and for that reason not all the requirements of the permit are translated into Measurable Goals identified in Appendix A. ADEQ will be asking each MS4 to provide input to appropriate Measurable Goals for their permits.

The permit requirement included in the last sentence of subsection 5.2 for the permittee to implement additional stormwater and non-stormwater BMPs or actions as necessary to reduce the release of pollutants to and discharge from the MS4 is consistent with CWA requirements. For example, in the event it is determined that a particular program element is inadequate or underperforming, the permittee must implement additional measures to comply with the maximum extent practicable requirement.

No changes were made to the permit in response to this comment.

F.8 Comment

Requiring permit modifications for SWMP (Appendix A) revisions will essentially create five year stagnancy periods and stifle ability and/or willingness to adjust programs to MS4 specific changes. Waiting for permission to drop an ineffective practice or modify activities and/or controls based on experience is extremely inflexible and causes undue expense for the permittee.

Tempe

Response

The Department does not agree the permit, as written, will create a five year stagnancy period for program "adjustments." The criteria requiring a permit modification are established in subsection 5.6, and include the discontinuation or decrease of an existing practice, control, or requirement.

Permit subsection 5.5 provides flexibility for the permittee to add new BMPs, add and remove temporary or experimental BMPs, increase existing BMPs, and replace existing BMPs, all without a permit modification. As such, not all SWMP revisions require a permit modification.

No changes were made to the permit in response to this comment.

F.9 Comment

This section should indicate that any department mandated changes to the permit and/or SWMP constitute appealable agency actions.

Tempe

Response

Appealable agency actions and procedures are set forth in A.R.S. §41-1092, Article 10 and apply regardless of the permit. No changes were made to the permit in response to this comment.

F.10 Comment

ADEQ provides in Section 5.6 of the Draft Permit that the City "shall not discontinue or decrease an existing practice or control, or requirement, (including an amount, frequency, time frame, or any other measurable goal specified in Appendix A), without prior modification of this permit." ADEQ should revise this provision to permit greater flexibility to discontinue BMPs so long as those BMPs are replaced with equivalent or greater pollution control measures, without requiring a permit modification.

David Kimball

Response
Section 5.5 of the permit allows the permittee to add new BMPs, add temporary or permanent BMPs, increase existing BMPs, and replace existing BMPs (with at least as effective BMPs) without permit modification. Section 5.6, requiring a permit modification, is only for when existing BMPs are to be decreased or discontinued. As such the requested flexibility already exists in section 5.5.

No changes were made to the permit is response to this comment.

F.11 Comment
If ADEQ keeps its permit language in subsection 5.6, we suggest striking the phrase "In addition" from the last sentence preceding the list.

Tucson

Response
The phrase "in addition" was removed from subsection 5.6, as suggested.

F.12 Comment
Subsection 5.1, first sentence – This section should be revised as follows for consistency with other sections in the permit: "*... Storm Water Management Program (SWMP) to reduce ~~designed to limit,~~ to the maximum extent practicable (MEP), ~~the release of pollutants discharges to, and~~ the discharge of pollutants to and from the MS4 ...*" (see sections 5.4 and 5.5 for consistency in using *to* and *from* in permit).

Mesa

Response
The term "limit" was replaced with "reduce" for consistency with section 402(p)(3) of the CWA as well as terminology of the permit.

This sentence was also revised to include the condition the MS4 must reduce the discharge of pollutants *to and* from the system, as suggested and for consistency with other permit sections.

F.13 Comment
Subsection 5.2, last sentence – The requirement for continuing to implement additional stormwater and non-stormwater "best" management practices is more stringent than the requirements established under the CWA, which is expressly prohibited by 49-255.01. Additionally, this is inconsistent with Section 5.5 allowing for adding new BMPs and temporary or experimental BMPs. Delete this sentence.

Mesa

Response
Subsection 5.2 establishes the permittee must, at a minimum, implement BMPs and measurable goals specified in Appendix A. This subsection also establishes the permittee must implement additional BMPs (other than those specified in Appendix A) as necessary to reduce the discharge of pollutants to the maximum extent practicable. The Department does not agree with the comment that this requirement is more stringent than section 402(p)(3) of the CWA, but rather is consistent with the CWA.

No changes were made to the permit in response to this comment.

F.14 Comment

Subsection 5.4, first sentence – For consistency, and in lieu of comments addressed in sections 4 and 7, this section should be revised as follows: "... of the program in reducing the discharge of pollutants to and from the MS4 to the maximum extent practicable ~~and to assess improvements in stormwater quality~~."

Mesa

Response

The overall objective of the CWA is to improve water quality. To meet this objective, section 402(p) of the CWA establishes permittees must, through the use of controls, reduce the discharge of pollutants to the maximum extent practicable. The permit is written with these objectives and requirements in mind. As part of the annual program review, the permit requires the permittee to assess stormwater quality to evaluate program effectiveness. For example, if through this annual evaluation, it is determined that stomwater quality has not improved but rather degraded or is not improving over previous years, the permittee would need to revise the SWMP (as necessary) to increase program effectiveness.

No changes were made to the permit in response to this comment.

F.15 Comment

Subsection 5.5, first paragraph, first sentence – The permit uses "... discharge of pollutants to and from the MS4 ..." in some places and "... discharge of pollutant to and discharges from, the MS4 ..." most of the time. Change here and in other areas for consistency to prevent confusion. This section (as well as others) should be revised as follows for consistency with other sections in the permit: "...of the program in reducing the ~~release~~ discharge of pollutants to and from~~, and discharges from,~~ the MS4 to the maximum extent practicable."

Mesa

Response

Where applicable, the phrase "...reduce the discharge of pollutants to and from the MS4..." was incorporated throughout the permit.

F.16 Comment

Subsection 5.5, item 2, first sentence – The CWA only requires implementation of BMPs not "controls" for Phase I MS4 permits which is overly broad and could require the treatment of stormwater and/or other actions by the permittee that are not practicable. Additionally, the use of "practices" in conjunction with BMPs is inappropriate. SWPPP is also inappropriate. Revise as follows: "In addition to the best management practices ~~or controls~~ described in the SWMP ~~SWPPP~~, the Permittee may implement temporary (i.e, for special events) ~~practices~~, experimental BMPs ~~or controls~~ at any time during the life of the permit."

Mesa

Response

The term "control" is consistent with terminology in section 402(p)(3) of the CWA. This term is also used throughout 40 CFR 122.26. Example, 40 CFR 122.26(d)(2)(iv)(D):

> "A description of planning procedures including a comprehensive master plan to develop, implement and enforce *controls* to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new

development and significant redevelopment. Such plan shall address *controls* to reduce pollutants in discharges from municipal separate storm sewers after construction is complete."

Moreover, 40 CFR 122.26(d)(2)(iv) specifies the SWMP "...must include management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate."

Therefore, the Department does not agree that requirements in this subsection are in appropriate.

No changes were made to the permit in response, except that the term "SWPPP" was changed to "SWMP."

F.17 Comment

Items 1, 3, and 4 – The permittee is unlikely to voluntarily expand their program by adding additional BMPs or increasing established frequencies if they do not have the ability to delete or reduce them at a later date without having to meet the requirements detailed in item 4. The conditions set forth here could actually have a chilling effect on the permittee's willingness to voluntarily enhance their program. ADEQ should consider the revisions to items 1 and 3 that would allow for removing or otherwise altering frequencies of BMPs the permittee initiates voluntarily as provided below. At the very least, these sections should be revised to address undefined terms as also indicated below.

- Item 1, first sentence – *"Addition of New BMPs: The Permittee may voluntarily add best management practices ~~or controls~~ to the SWMP ..."*
- Item 1, new second sentence – *"...life of the permit. BMPs voluntarily added to the SWMP by the Permittee may be removed or altered at the discretion of the Permittee at any time. A description of these modifications ..."*
- Item 3, new second sentence – *"... life of the permit. Any BMP where an increase in frequency is voluntarily added to the SWMP by the Permittee may be removed or altered at the discretion of the Permittee at any time. A description of these modification(s)..."*

Mesa

Response

The Department notes the addition, increase, or replacement of BMPs is not necessarily voluntary, but may be required under the maximum extent practicable provision of the CWA. In the event it is determined during the life of this permit the SWMP needs to be updated to maintain compliance with the permit, this subsection establishes how this is accomplished.

Also, consistent with the iterative process of using BMPs, assessment, and refocused BMPs leading toward (or maintaining) water quality standards, Section 5.5 is written to provide the permittee the flexibility to add new BMPs, increase existing BMPS, and replace BMPs as necessary and without a permit modification.

No changes were made to the permit in response to this comment.

G. PERMIT PART 6

G.1 Comment

Section 6.2 and 6.3 – The conditions set forth for re-opening a permit are adequately detailed in State statute. Including these conditions in the permit itself is unnecessary and should be deleted. In the absence of addressing this issue, this should be deleted from this section and relocated to section 9.16.

Mesa

Response

As indicated in the comment; conditions for re-opening a permit are established in Arizona rule (A.A.C. R18-9-B906) and federal rule (40 CFR 122.62). Specific conditions for reopening and modifying the permit are included in various sections of the permit for clarity. No changes were made to the permit in response to this comment.

H. PERMIT PART 7

H.1 Comment

Several constituents (including VOCs, SVOCs, DDE, and organo-chlorine pesticides, and organic phosphorous pesticides) should be dropped from the list of monitoring parameters as historical sampling demonstrated that these constituents never exceeded detection limits.

Phoenix

Response

The characteristic of stormwater changes based on a variety of variables, including (but not limited to), duration since the last storm event, illicit discharges (especially intermittent discharges), development of impervious areas, changes to the storm sewer system (including expansion), and the coming and going of industries within the MS4 boundaries. The fact that constituents were not noted above detection limits in historic sampling efforts does not preclude them from existing in current or future discharges. The permit therefore includes testing for the 120 priority pollutants. In consideration of the increased costs for these parameters, however, this expanded testing is only required every other year of the permit term.

No changes were made to the permit as a result of this comment.

H.2 Comment

Subsection 7.3.3 states "[s]ampling shall be conducted over the first six hours of the discharge, or for the entire discharge period if the discharge is less than three hours." When using automatic sampling equipment, the sample jars fill based on volume, which provides the most accurate flow-weighted composite sample. Requiring time limitations on sampling protocol is likely to result in the inability to collect samples due to the significant variation in storm intensity and duration. For example, during high-intensity storms, sampling equipment may fill too quickly resulting in the inability to collect samples for the minimum 3 hour duration. Time limitations should not be included in the sampling protocol, or should be further clarified to allow for the most representative sample collection.

Phoenix Tempe Glendale Tucson

Response
Sampling was discussed extensively in coalition meetings. As noted previously ADEQ also performs stormwater monitoring within our programs, and is aware of related challenges, including autosamplers that do not trigger, potential access challenges, and the variability in intensity and location of storm events. In some cases, planned samples do not meet criteria and therefore must be discarded or in some way qualified. Sampling from MS4 discharges is further complicated by 'first flush' issues.

With consideration of these issues, the draft language was crafted to provide as much structure and consistency in sampling events as possible. There are potential drawbacks that could be identified in any sampling scenario proposed; however, ADEQ believes the permit requirements to be workable for most storm events and monitoring scenarios. ADEQ has also discussed the sampling language with representatives of the USGS, the agency that collects stormwater samples for the cities of Phoenix and Glendale, and it appears the language does not pose any significant obstacles. At the request of Phoenix and the USGS, the sampling collection was extended to cover the first six hours of the discharge (vs. three-hours originally proposed) in the draft that was public noticed.

H.3 Comment
Subsection 7.4 requires the City to estimate the annual total pollutant loading and the event mean concentration of each pollutant using representative storm event data for each year. The monitoring protocols outlined in Section 7.0 are designed to ensure that the stormwater discharges sampled represent the first flush and are likely to have the highest concentrations of pollutants. This data is not appropriate for use in pollutant loading calculations since it will lead to over-estimated pollutant calculations. Please clarify how ADEQ intends to utilize pollutant load calculations in enforcing the permit and establishing future permit conditions. ADEQ cannot use these pollutant load calculations to enforce additional requirements, since these will reflect worst-case scenario instead of representative of typical stormwater discharges. The Permit should be revised to include only the parameters set out in 40 CFR 122.26(d)(2)(iii)(B) to ensure the permit is not more stringent than required by the CWA and the previously referenced state statutes. The federal regulation does not include pollutant load estimates for total metals, only cadmium, copper, lead and zinc.

Phoenix Tempe Scottsdale Glendale

Response
The permittee is required to design stormwater sampling events to include the "first flush" (first 30 minutes of stormwater discharge) of a representative storm event whenever possible. Analytical data from the "first flush" sample or aliquot can be influenced by a variety of conditions in and around the MS4, including the amount of time since the last storm event and illicit discharges to the storm sewer system before or during a particular storm event. Typically, the first flush will contain the most pollutants, both in type and concentrations, just as the last sample in a 6 hour event would typically contain less pollutants (both in type and concentration).

It is not appropriate to exclude the first flush sample results in annual total pollutant loading or the event mean concentration calculations as this could significantly underestimate pollutant concentrations in each event or annual pollutant loading. The first flush portion of the discharge is important because it is composed primarily of first discharge. Discharges later into the event are comingled with discharges from more remote portions of the basin (i.e., consist of "first flush" from areas further from the outfall and portions of the basin that have been flushed); thereby resulting in a low estimation of the first discharge load of many constituents.

These data are to be used by the Permittee in their ongoing responsibility to implement and maintain a stormwater management program designed to reduce, to the maximum extent practicable, the release of pollutants to and discharges from the permittee's storm sewer system. ADEQ will use this same data to evaluate the permittee's efforts in implementing and complying with the permit; however, the Department cannot prospectively say how the data might be used in establishing future permit conditions.

Also, based on this comment ADEQ believes some commenters' may be unclear on the full requirement of subsection 7.4. The permit requires the City to estimate the annual pollutant load and the event mean concentration of the *cumulative discharges to water of the U.S. from all identified municipal outfalls*, not just the major outfalls monitored. Subsection 7.4 was revised to provide clarity on calculating annual and event mean concentration estimates.

Moreover, the referenced cite (40 CFR 122.26(d)(2)(iii)(B)) is the Permittee's application requirements and does not necessarily dictate permit conditions. Section 402(p) of the Clean Water Act requires the permittee to reduce the discharge of pollutants to the maximum extent practicable. This fundamental Clean Water Act requirement does not exclude any metals.

No changes were made to the permit in response to this comment.

H.4 Comment

Subsection 7.5.2 requires the City to develop and maintain a Quality Assurance (QA) Manual and specifies requirements for the manual. Environmental laboratories in Arizona are already regulated by the Arizona Department of Health Services (ADHS) under A.A.C. Title 9, Chapter 14, Article 6. Article 6 contains requirements for licensing of laboratories and quality assurance. Specifically, R9-14-615 provides detailed requirements for the laboratory to follow strict quality assurance procedures and to have a written quality assurance plan, including requirements for the plan contents. The draft Permit requires the City to utilize a laboratory that is licensed by the ADHS Office of Laboratory Licensure and Certification (subsection 7.5.4.1). It is inappropriate for ADEQ to require that the City have actual responsibility for or management of an independent licensed laboratory's quality assurance program since the laboratories are already regulated by the ADHS.

Phoenix Glendale

Response

The quality assurance requirements in the permit relate to the entire sampling event by describing the sampling event, including personnel, equipment used, and analyses to be performed, The purpose of the QA manual is not to regulate analytical laboratories, but rather to establish systems and procedures to be used by the permittee in implementing the sampling program requirements. This involves different information than is generally included in laboratory "quality assurance plans" required by ADHS (which may be part of what is needed in 7.5.2.3.).

Also, the referenced permit subsection requires the permittee to develop a QA manual only for those activities (sample collection, sample analyses) that are conducted in-house. If activities are contracted the permittee should include a requirement for contractors to provide the information needed to satisfy this provision. Often a permittee may collect some samples, and contract for others, or analyze for some constituents and contract the analyses of others. Whether the QA manual is for activities conducted in-house or those contracted, copies of the QA information that addresses the sampling collection and analyses requirements of Section 7.5.2 are to be retained by the permittee and available for review by ADEQ or ADHS.

No changes were made to the permit in response to this comment.

H.5 Comment

Subsection 7.5.4.4 requires the City to use an analytical method with a LOQ that is lower than the water quality criteria applicable to the waters of the U.S which receive the stormwater discharge. If all methods have LOQs higher than applicable water quality criteria, the approved analytical method with the lowest LOQ shall be used. This section is nearly impossible to comply with and adds significant analytical burden and cost. Since the LOQ is determined individually for each parameter, each parameter must be evaluated to determine if the LOQ is below the applicable SWQS for that parameter. Next, if the LOQ is not less than the SWQS, the City must search all approved methods for the lowest LOQ. This could feasibly include checking with a variety of labs to determine which methods they are approved to perform and if the applicable LOQ for the equipment/lab/parameter is lowest for the parameter. This requirement should be removed from the permit entirely.

Phoenix Glendale

Response

This language is not significantly different than in other AZPDES permits issued to the permittee. The purpose is to require the use of analytical tests with appropriate sensitivities to analyze below SWQS where it is possible to do so. The use of methods or analyses without adequate sensitivity may not provide the necessary information and as such, may be a waste of resources. In establishing analytical methods to meet the permit requirements of subsection 7.5.4.4, ADEQ suggests the permittee work with one or more ADHS licensed laboratories to determine the most appropriate method(s).

No changes were made to the permit in response to this comment.

H.6 Comment

Subsection 7.5.4(5) requires a standard calibration to be used where the lowest standard point is equal to or less than the LOQ. This does not address single point calibrations and is not possible to comply with when using methods such as 200.7 for metals.

Phoenix Glendale Tempe

Response

In those cases where methods utilize a single point calibration, such as 200.7 for metals, the permittee should request the laboratory to provide the lowest concentration for each analyte over which the instrument response is linear. The linear dynamic range for the method should be established as part of the required QA/QC procedures.

A footnote as added to the permit for clarification.

H.7 Comment

The monitoring parameters in subsection 7.5, Table 2 are a significant expansion over the current list that the City is testing in its routine monitoring program. Accommodating the new constituents will require new protocols, more extensive site work, more personnel time, and significantly increased costs. ADEQ should pare down the monitoring list, taking into account local and national data regarding what constituents are likely to be present in stormwater at significant concentrations.

Phoenix Scottsdale Glendale

Response
While the list of monitoring parameters is expanded, over the previous permit, the list includes priority pollutants of concern in discharges to and from municipal separate storm sewer systems (including illicit discharges). The focus of the permit is not limited to only constituents likely to be present at "significant concentrations," but also *what* is in the system. Knowing what is in the system is critical to reducing the discharge of pollutants to the maximum extent practicable, particularly when fulfilling the requirement of the permit to identify and eliminate illicit discharges.

See also response to H.1.

No revisions were made to the permit in response to this comment.

H.8 Comment
Thallium should be removed from the list to be consistent with the monitoring requirements in the draft MS4 permit recently developed by ADEQ for ADOT.

Phoenix Tucson

Response
Thallium was included because its presence in the environment is often the result of urban/industrial activities, including smelting of ores (including copper), cement factories, and coal burning power plants. It is also used in electronic research equipment and was historically used in rodenticides. Thallium is stable in the environment as it is neither transformed or biodegraded; thus, past and current uses (including byproducts) of thallium contribute to its presence in the environment, including stormwater. Thallium has been detected in 10% of urban stormwater runoff at concentrations ranging from 1 to 14µg/L (Cole et al. 1984) and in rivers in the U.S. that receive mining operations effluents from 0.7 to 88.3µg/L (EPA, 1980a, 1988). Once released into waters, thallium tends to accumulate in aquatic life. Thallium has also been reported in sediment obtained from street sweeping operations and stormwater systems (e.g., retention and detention basins).

No changes were made to the permit in response to this comment.

H.9 Comment
VOCs are generally not found in stormwater due to their high vapor pressure – they do not persist on the ground or other surfaces to be picked up by stormwater, and these compounds volatilize quickly in turbulent stormwater flow.

Phoenix Scottsdale Tucson

Response
While VOCs, under certain conditions, can volatilize it would be inappropriate to dismiss the potential for them to be present (in detectable concentrations) in stormwater discharges from the storm sewer system. As a class, VOCs are one of the most widely used group of chemicals for commercial, industrial, and domestic applications and therefore one of the most ubiquitous group of contaminants in the environment. Whether or not they persist on the ground or other surfaces would largely depend on climactic conditions and quantity of pollutant, and elapsed time since released into the environment or storm sewer system. Additionally, direct discharges (e.g., dumping, spilling, etc.) to the storm sewer system would also have a direct effect on the quality of stormwater discharges.

It is noted VOC analyses are to be conducted using a discrete sample, from the "first flush," when practicable.

No changes were made to the permit in response to this comment.

H.10 Comment

Trimethylbenzene and xylene are not on the list of Table II Organic Toxic Pollutants from 40 CFR 122, Appendix D. ADEQ should not include these compounds because to do so is more stringent than CWA requirements.

Phoenix Tucson

Response

The CWA (Section 402(p)) requires controls to reduce the discharge of pollutants to the maximum extent practicable. Simply because these compounds are not included in 40 CFR 122, Appendix D does not eliminate them from being a pollutant of concern. The CWA specifies pollutants must be reduced to the maximum extent practicable. This requirement cannot be achieved without knowing the types and concentrations of pollutants discharged from the MS4.

Xylenes and trimethylbenzene are included in the VOC scan (see Comment / Response H.9 above) and do not present an additional sampling or analytical burden. It is noted that xylenes in particular are widely used in domestic, commercial, and industrial applications and are therefore a common pollutant.

No changes were made to the permit in response to this comment.

H.11 Comment

Most semi-volatile organic compounds are relatively insoluble, and unlikely to persist in Arizona's stormwater. ADEQ should remove the entire list. At a minimum, ADEQ should remove dichlorobenzene, phthalates, hexachlorobenzene, hexachlorobutadiene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene to be consistent with the monitoring requirements in the draft MS4 permit recently developed by ADEQ for ADOT.

ADEQ should also remove the PCBs to be consistent with the monitoring requirements in the draft MS4 permit recently developed by ADEQ for ADOT.

Phoenix Tucson

Response

ADEQ agrees that dichlorobenzene, phthalates, hexachlorobenzene, hexachlorobutadiene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene are typically not highly soluble in aqueous media. However, as organic loading goes up so too does the likelihood that these (and other compounds) would persist. Additionally, their presence and concentrations in stormwater may indicate a need for potential source control activities.

The Phoenix and ADOT individual AZPDES permits are written and issued based on each of the respective storm sewer systems and are therefore understandably different. ADOT's monitoring parameters were revised based on availability of studies from DOT, NURP, U.S. DOT, EPA, and CalTrans that specifically characterized highway runoff. Although not in ADOT's permit, the constituents may be present in more traditional urban MS4 environments.

No changes were made as a result of this comment

H.12 Comment

The list of pesticide compounds should be deleted because of the costs and questionable utility of this information. Pesticide monitoring requires additional field protocols and running multiple analytical methods. Most of the pesticides and herbicides specified have been illegal to use or sell in the United States for many years. While it is possible that some compounds may be brought into the country illegally from Mexico, it is not clear that the City or any other MS4 can develop best management practices that address such activities. Most of these chemicals are no longer in use nor registered for use in Arizona and are not likely to have sources within the MS4. Only two chemicals on the list, DDE and dieldrin, both no longer used, were detected at low levels in the USGS NAWQA study. ADEQ should show that there is a particular reason to expect these pollutants in stormwater before requiring them to be monitored in the permit. Furthermore, a review of the past seven years of ADEQ's Pesticides Annual Report indicates no usage of any of the compounds on this list, except for endosulfan. ADEQ's report shows that endosulfan was subject to only minor usage during several sporadic years in Maricopa and Pima County. Further, it is likely that this usage was limited to non-urban agricultural areas.

Phoenix Tucson Scottsdale

Response

While some of the pesticides required to be monitored (Section 7, Table 2) are no longer legal for use in the U.S., they are known to persist in areas where they were historically used (agricultural, vector control, and domestic applications). Other pesticides remain in use in Arizona (e.g., endosulfan). Regardless, these pollutants persist over time and their breakdown products continue to enter waters of the U.S. through a variety of sources, including erosion of contaminated soils and discharge of sediments. An example of this is a segment of the Salt River in the Phoenix area which is impaired from the historical use of pesticides, including DDT.

It is also noted that "insecticide concentrations in the West Salt River Valley near Phoenix are among the highest in the Nation" (USGS NAWQA study, 2000), and therefore continue to be a source of pollutants to waters of the U.S. ADEQ is aware however, that pesticide analyses can be expensive, and therefore, are only required every other year of the permit term to reduce overall cost while continuing to evaluate the effects of stormwater discharges.

No changes were made to the permit as a result of this comment.

H.13 Comment

Delete the requirement for field filtering to test for dissolved metals in Table 2, Footnote 5. Filtering the sample at the lab should be sufficient, since it could only result in higher concentrations than a field filtered sample (yet more realistic than assuming a 1:1 ratio).

Phoenix

Response

The permittee has choices for collecting samples under this provision. The permittee may collect filtered samples for dissolved metals analyses, or the permittee may collect total metals and assume a 1:1 total to dissolved metals ratio (as a third option, the permittee may also choose to conduct a site-specific translator study). However, if dissolved metals are collected, they must be filtered in the field at the time of sample collection (or within 15 minutes) utilizing a 0.45 µm filter as required by updated test methods promulgated earlier this year in 40 CFR 136.

No changes were made to the permit in response to this comment.

H.14 Comment

40 CFR Part 122.26, Paragraph (d)(1)(iv)(D) is an application requirement. If a dry weather screening plan is in place and is consistent with Appendix C and SWMP requirements, does ADEQ expect the permittee to once again go through the assessment of identifying field screening points?

Tempe

Response

The identification and monitoring of field screening points should be an iterative process, and periodically re-evaluated. The identification is particularly important in areas which may have been annexed in an MS4 since the last screening was done, where land uses have changed, or where revisions or extensions to the MS4 system have been made. While the referenced federal rule cite addresses permittee application requirements, it sets the framework for illicit discharge detection and elimination requirements in 40 CFR 122.26(d)(2)(iv)(B). ADEQ clarifies, however, there is no expectation that MS4s re-grid the entirety of municipal areas that were previously done for initial applications per 40 CFR 122.26(d)l1)(iv)(D)(1) and (2).

No changes were made to the permit in response to this comment.

H.15 Comment

The CWA approved method for Ortho-P (Total) requires sample filtration within 15 minutes. ADEQ should clarify this requirement.

Tempe

Response

The commenter is correct; pursuant to 40 CFR 136.3, Table II, Required Containers, Preservation Techniques, and Holding Times, samples collected for orthophosphate analyses are to be filtered within 15 minutes (of collection) and analyzed within 48 hours.

No changes were made to the permit in response to this comment.

H.16 Comment

Parts of this section are contrary to the order issued by the Water Quality Appeals Board on July 11, 2005, which stated that the permittee is responsible for the quality and accuracy of the data it supplies to ADEQ, but not required to ensure that ADHS licensed laboratories meet QA/QC requirements and procedures.

Tempe

Response

Subsection 7.5.1 states "The Permittee is responsible for the quality and accuracy of all data required under this permit" which is legally accurate and not "contrary" to the referenced matter. This permit does not require the Permittee to inspect or otherwise regulate the laboratory, but rather to affirm the quality and accuracy of the data itself and determine how and if to use the data under the permit terms.

No changes were made to the permit in response to this comment.

H.17 Comment

Section 7.5.2 mandates numerous items that will be virtually impossible to track. For example, ADEQ is requiring Base/Neutrals to be analyzed by several different methods by potentially numerous different laboratories based on resolutions of individual parameters (Section 7.5.4(4)). Each laboratory instrument and parameter has its own

specific MDL, LOQ, QC requirements, etc. Each of these laboratory, instrument, and parameter specific items change on a regular basis (MDL's annually for each parameter). There is no way to keep up with these constant changes specifically when ADEQ is mandating the need to shop for laboratories on a parameter by parameter basis. Other examples include requiring QC results and acceptance criteria to be retained in the permittee's QA manual and data review beyond the certified laboratory's QA/QC procedures. ADEQ has not demonstrated the need for ADHS requirements (plus more) to be placed in this AZPDES permit.

ADEQ does not explain why MDLs are now required to be reported in QA manuals, when this is not an ADHS requirement. These are laboratory specific statistical evaluations that serve no purpose as a requirement in a stormwater permit.

This section also requires "corrective actions to be taken by the permittee or the laboratory as a result of problems identified during QC checks." This is clearly a laboratory function that the permittee may not have the authority or expertise to address.

During previous discussions, ADEQ personnel indicated they were going to replace the term MDL with limit of detection (LOD) to be consistent with language already in Rule AAC R9-14-601 (54). Why was this change not made?

Tempe

Response
This permit requires the permittee to establish, update, and follow a Quality Assurance Manual as it relates to sample collection and analyses. The purpose of the manual is to ensure the sampling program requirements are conducted in a consistent and reproducible manner, and to assist the Department with determining permit compliance. The purpose of the QA Manual is not to impose requirements on the analytical laboratories, but rather to establish the procedures to be used by the permittee in implementing the sampling analyses requirements.

The Department is unclear about the comment that BNAs are to be analyzed by several different methods. Table 2, Footnote 7, gives the permittee the flexibility to conduct BNA analyses using U.S. EPA Method 625 *or* 8270. Moreover, ADEQ is not mandating the permittee shop for laboratories on a parameter by parameter basis, but gives the permittee the flexibility to have the same or different laboratories conduct various analyses. In order to maintain consistency, however, ADEQ does recommend that a particular analysis be conducted by the same laboratory for each sampling event.

Where applicable, the term "method detection limit" (or MDL) was replaced with "limit of detection" (or LOD) throughout the permit. This change was made to be consistent with A.A.C. R9-14-601 et seq. It is noted that "method detection limit" (or MDL) is the terminology used in 40 CFR 136; therefore, for the purpose of this permit, the two terms are considered synonymous.

There can be a variety of problems identified during QC checks for which the permittee, not the laboratory, must take corrective actions. This may include such actions as providing explanations on flagged data, working with the laboratory to re-run samples, re-quantify results, conduct 3rd party data validation, change methods, to seeking another laboratory for future analyses. Therefore, corrective actions are not limited to a laboratory function, but may involve the laboratory.

No changes were made to the permit in response to this comment.

H.18 Comment

In section 7.5.4, ADEQ indicates that parameters such as flow, pH, DO, Temperature and TRC can be measured with methods approved by ADHS or ADEQ. Does a list of approved methods for these parameters exist? How does this approval process work? There are surely dozens, if not hundreds, of pieces of equipment in use today among all Phase I MS4s. Will ADEQ require approval for all previously purchased equipment?

This section states that "for results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods". Does ADEQ expect the permittee to staff full time chemists to ensure analysis of each sample is conducted as outlined in the applicable method? As stated on page one of the Arizona Data Qualifiers Revision 3.0 " Arizona Department of Environmental Quality expects that data reported utilizing the following qualifiers, unless stated otherwise, is useable, scientifically valid and defensible. In the laboratory's judgment if the data should not be used for compliance, the T6 qualifier must be used."

Tempe

Response

Subsection 7.5.4 was revised to require field analyses to be conducted in accordance with procedures established in 40 CFR 136, where such procedures exist. This subsection was also revised to have the permittee prepare Standard Operating Procedures (SOPs) for all analyses conducted in the field to ensure consistency between sampling events and locations. Copies of the SOPs are to be included in the first year Annual Report, and retained in the Quality Assurance Manual.

This permit does not require nor does ADEQ expect the permittee to employ a full time chemist to ensure analyses are conducted as outlined in the applicable method. Using the QA Manual required in subsection 7.5.2, the permittee should, however, establish a process for evaluating data provided in laboratory reports, including any data qualifiers that would render the data invalid and any necessary corrective actions.

ADEQ does not concur that it is nearly an impossible task to establish whether or not a LOQ is below an applicable water quality standard, or to establish the method with the lowest LOQ if all methods have an LOQ above a SWQS. The parameters listed in Table 2 are a common list of pollutants used throughout Clean Water Act programs, including stormwater. Should the permittee have problems in doing so with a particular parameter it should request written clarification from ADEQ (or ADHS) whether use of a particular method is appropriate.

H.19 Comment

In 7.6 (15) ADEQ requires the permittee to record the "published and laboratory (MDL) of each method used." This information consists of instrument specific estimates at the time the specific method was written. How and why does ADEQ expect laboratories and permittees to comply with this requirement? This is a nearly impossible task that results in no improvement to stormwater quality.

Tempe

Response

Because MDLs vary between methods, versions of methods, and laboratories, this information is helpful to the agency as a point of reference when comparing reported analytical results over time. This requirement is not intended to consist of an individual and separate study of instrument and operator performance each and every time samples are submitted. The agency is requesting information which the laboratory has already generated, consistent with laboratory licensure requirements for the method of

interest. ADEQ does not require submittal of the complete study. ADEQ is requesting only the results of that study, *i.e.*, the calculated MDL which the laboratory is able to consistently achieve for the method, instrumentation, and operating procedure.

No changes were made to the permit in response to this comment.

H.20 Comment

7.6 (~~19~~) (20) is unclear. Is this section requiring a laboratory data summary interpretation? Why does corrective action need to be documented with monitoring activities? Corrective actions are already a requirement in this permit and must be reported annually. This section is duplicative and needs clarification.

Tempe

Response

Subsection 7.6 is specific to monitoring events and establishes information the permittee must retain. For example, subsection 7.5.4 requires the permittee to prepare a QA Manual that establishes how the permittee will perform data review; report results to ADEQ; resolve data quality issues; and identify limitations on the use of the data. Subsection 7.6 specifies that the permittee must retain records, for example, on how sampling activities were conducted and how any resulting issues were addressed.

No changes were made to the permit in response to this comment.

H.21 Comment

In subsection 7.4, to be consistent with ADEQ's approach in the ADOT permit, change "total ammonia, total organic nitrogen (TKN)" to "total ammonia plus organic nitrogen (TKN)" and change "total metals" to "for detected metals.

Tucson

Response

The permit was revised as suggested.

H.22 Comment

Clarify the phrase, "records of all data use" in subsection 7.7.

Tucson

Response

For clarity, the permit text has been changed to "records of all data collected."

H.23 Comment

Section 7.1, items A and C - Wet weather stormwater sampling does not provide any useful data for "characterizing stormwater quality." Historical data has not allowed for the identification of trends: parameter results are inconsistent, and the data has not been useful for BMP implementation. Additionally, the data does not provide an accurate account of pollutant loading (see comments on section 7.3.3). This section should be revised as follows:

Monitoring Objectives

~~A. To characterize stormwater quality and identify stormwater pollutants,~~

B. To detect and eliminate illicit discharges,

C. ~~To evaluate the general effectiveness of specific BMPs and the SWMP as a whole, in reducing the discharge of pollutants, and~~

~~D. To estimate pollutant loads to waters of the U.S.~~

Mesa

Response
The Department does not agree that wet weather monitoring does not provide useful data for characterizing stormwater quality. As identified in EPA's 2002 Program Evaluation Report, one of the key factors, or deficiencies, in the implementation of Phoenix's 1997 permit was the lack of monitoring data. This permit is written to address this deficiency by expanding the monitoring program with four main objectives, which are consistent with 40 CFR 122.26.

No changes were made to the permit in response to this comment.

I. PERMIT PART 8

I.1 Comment
ADEQ's reapplication requirements in the draft permit are duplicative because they expect the City to go through another exercise of identifying receiving waters, describing drainage areas and outfalls, providing a map, locating rain gauges, summarizing discharge characterization and pollutant loads, and providing a fiscal analysis. These permit renewal requirements are more extensive than EPA requires and are inconsistent with the intent of ADEQ's AZPDES rule, R18-9-B904(B)(2), which states:

Unless otherwise specified in the permit, an annual report submitted 180 days before the permit expiration date satisfies the reapplication requirement for an MS4 permit. The annual report shall contain:
a. The name, address, and telephone number of the MS4;
b. The name, address, and telephone number of the contact person;
c. The status of compliance with permit conditions, including an assessment of the appropriateness of the selected best management practices and progress toward achieving the selected measurable goals for each minimum measure;
d. The results of any information collected and analyzed, including monitoring data, if any;
e. A summary of the stormwater activities planned for the next reporting cycle;
f. A change in any identified best management practices or measurable goals for any minimum measure; and
g. Notice of relying on another governmental entity to satisfy some of the permit obligations.

It is clear that this rule intended to minimize the burden for reapplication by letting the data in the annual report suffice to support the application. The minimal reapplication information required in the rule should be adequate, except under unusual circumstances. The yearly updates supplied by the City in each annual report should suffice to keep the information "fresh," and there should be no need to reiterate and compile information previously submitted into a 4th year report of expanded scope. ADEQ should eliminate subsection 8.1.2 of the permit and rely on the requirements expressed in rule.

Phoenix Tucson

Response
The nature and format of past annual year reports were not adequate to provide a comprehensive picture of the MS4 activity status. The MS4 program is now over a decade old and there have been changes to City boundaries and activities which may affect drainage areas, outfalls, maps, etc. ADEQ is not clear that MS4s have kept current in updating information and thus is requiring a complete submittal for the next renewal

cycle. As indicated in the comment, A.A.C. R18-9-B904 provides the Department the authority to specify reapplication requirements in the permit. The reapplication requirements in the permit are predicated on providing the Department with up-to-date information in anticipation of the subsequent permit. In addition, a comprehensive SWMP is to be kept available for public review and comment.

No changes were made to the permit in response to this comment.

I.2 Comment

In subsection 8.1.2, item 2, use of the term "receiving waters" is confusing here because it is undefined.

Phoenix Tucson

Response

The term "receiving water" is consistent with terminology used in and throughout 40 CFR 122. In the context used in subsection 8.1.2, receiving water refers to waters of the U.S. that receive discharges from the permittee's storm sewer system. For example, the Salt River would be the *receiving water* from an outfall discharging to the Salt River.

No changes were made to the permit in response to this comment.

I.3 Comment

In subsection 8.2 insert the phrase "periodically, but at least" before "semi-annually" in the second sentence. This addition would cover the possibility of submitting more frequent advisement of non-filers to ADEQ. Some MS4s would prefer to report non-filers immediately upon identification, rather than adding another requirement for compiling a report on a different frequency than the annual report.

Phoenix Tucson Glendale

Response

ADEQ is aware some MS4s would like to report on a different schedule and has no objection; this language was drafted and included in this permit for Phoenix's expressed preference. However, the permit was revised to allow for more frequent notification, as suggested.

I.4 Comment

In subsection 8.3, item f, change "management practices and pollution controls" to "BMPs" to be consistent with the defined terms in the Permit. Also, delete the phrase "or eliminate" because source elimination is more stringent than and inconsistent with CWA requirements for MS4s.

Phoenix Tucson

Response

The phrase "management practices and pollution controls" was replaced with the term "BMP" for consistency with permit requirements.

While the term "eliminate" was not removed as suggested, this permit part was revised to read "...reduce or eliminate, as applicable...." Consistent with the CWA and 40 CFR 122, the permittee is required to control the discharge of pollutants to the maximum extent practicable and may include the elimination of pollutants. For example, in some situations pollutants must be eliminated whether or not they result in an exceedance of a surface water quality standard. For example, a pollutant that is the result of an illicit discharge is eliminated as the illicit discharge is eliminated.

I.5 **Comment**

ADEQ states in Section 8.2: "The Permittee shall notify the Department of any construction or industrial activities that are known to be occurring without ADEQ's authorization to discharge stormwater." ADEQ should revise this sentence to clarify that the City's obligation to notify ADEQ applies only to construction or industrial activities subject to AZPDES permitting requirements.

David Kimball

Response

The comment is consistent with the intent of the permit; ADEQ has made clarifications in the text.

I.6 **Comment**

The definition of outfall should be revised as follows: "Outfalls - Identification of locations where stormwater discharges leave the MS4."

Mesa

Response

The term "outfall" as defined in this permit is consistent with the definition established in 40 CFR 122.26. Therefore, no changes were made to the permit in response to this comment.

I.7 **Comment**

Subsection 8.1.2, Item 4, requiring the permittee to provide an evaluation and to identify trends, improvements, or degradation is an impossible task that the permittee would most likely not be willing to sign off on in an annual report (signatory requirements).

Mesa

Response

The Department disagrees that, through full implementation of the permit, it would be an impossible task to provide the information and evaluation specified in this subsection in the 4th year annual report. This information will be useful to both the permittee and Department in evaluating program effectiveness, permit compliance, and in preparing the subsequent permit.

I.8 **Comment**

The requirements of 8.1.2, Items 6, 8, and 9 are redundant and unnecessary. If the permittee is required to submit a revised SWMP under item 6 (Updated SWMP) as part of the 4th year annual report, then providing additional details under items 8 (Modification to the SWMP) and 9 (Proposed Modifications to the SWMP) would not be relevant resulting in a waste of time and resources while not providing any additional information.

Mesa

Response

Each item listed has specific requirements as summarized below:

Item 6 requires a copy of the current SWMP, under the assumption updates were made throughout the permit term. Otherwise, it would be the SWMP specified in subsection 5.3;

Item 8 specifies the permit must include a summary of changes to the SWMP during the permit term (often these changes may be made on a piecemeal or annual basis). This summary should provide a quick, comprehensive view of changes; and

Item 9 requires the permittee to identify any proposed modifications to the SWMP for the next permit term.

In short, these requirements are not redundant. No changes were made to the permit in response to this comment.

J. PERMIT PART 9

J.1 Comment
Change "12.2.2" to "9.2.2" in item number 3 to subsection 9.2.

Phoenix Tucson

Response
The reference to "12.2.2" was replaced with "9.2.2."

J.2 Comment
ADEQ should delete subsection 9.3, item 3, because the referenced section of the CWA is not applicable to MS4 discharge program. ADEQ may point out as it routinely does that this is a standard condition for all of their AZPDES permits. However, it is important for MS4s to draw this distinction in regulation, and to be completely clear about the matter ADEQ should refrain from incorporating this condition – as well as all other inapplicable AZPDES discharge requirements - into the MS4 permits.

Phoenix Tucson Mesa

Response
The Department does not agree with the comment that this provision should be removed. Although it currently has limited applicability to MS4s, if relevant federal ELGs or prohibitions are to be established during the permit term, this provision would be effective. Pursuant to 40 CFR 122.41, this requirement is a standard permit condition with which the permittee must comply. Removing this provision would be inconsistent with federal (and state) rules

No changes were made to the permit in response to this comment.

J.3 Comment
Revise subsections 9.3.4 and 9.3.5 as they both contain incorrect citations to the law and penalties that the City is subject to under the Permit.

Phoenix

Response
The Statute and Rules cited in subsections 9.3.4 and 9.3.5 were evaluated and revised as necessary.

J.4 Comment
Subsection 9.8 states that 40 CFR 122.41(g) is incorporated by reference. However, additional language has been added. This sentence should be revised to state "[t]his permit does not convey any property rights of any sort, or any exclusive privilege."

Phoenix Glendale

Response
The additional language included in subsection 9.8 expands on, but is not inconsistent with the rule text. Language is provided for clarification as to the limits of AZPDES permits in terms of property rights. No changes were made to the permit in response to this comment.

J.5 **Comment**
Subsection 9.10.4 includes a reference to Title 18, Chapter 9, Article 10. This should be deleted, as Article 10 applies to biosolids and is not applicable to the Permit.

Phoenix Tucson Glendale

Response
The reference to A.A.C. Title 18, Chapter 9, Article 10 (biosolids) was removed from the permit.

J.6 **Comment**
Subsection 9.16 incorporates by reference 40 CFR 122. Please clarify the appropriate section that is being incorporated by reference (40 CFR 122.62). Additionally, this section as currently written gives ADEQ broad discretion on when ADEQ can reopen a permit, well beyond what is intended in 40 CFR 122.62 and R18-9-B906. Revise subsection 9.16 to clarify the Permit can only be reopened for cause, as provided by 40 CFR 122.62(a) and (b) and R18-9-B906.

Phoenix Glendale

Response
For clarification, the reference to 40 CFR 122 was amended to refer to 40 CFR 122.62 (Modification or Revocation and Reissuance of Permits). The criteria listed in subsection 9.16 for reopening a permit is intended to summarize lengthy provisions in 40 CFR 122.62 and A.A.C. R18-9-B906. The Department does not agree that this subsection, as written, gives ADEQ any broader (or less) discretion than is permitted by statute or rule.

J.7 **Comment**
ADEQ should delete subsection 9.18 because the provision in A.R.S. § 49-205 pertains to the director and requirements for the director to disclose publicly any records obtained. This statutory provision should not be construed as a separate responsibility for the City to make these records available to the public.

Phoenix Tucson

Response
The requirements of this provision do not say who is required to disclose documents or direct the MS4 to make these publicly available. Rather, it is a standard AZPDES condition advising the permittee of information that will be disclosed and of the provisions for confidentiality.

J.8 **Comment**
Subsection 9.3, Part 5 incorrectly indicates this permit is a general versus an individual permit.

Tempe

Response
The term "general permit" was revised to "permit."

J.9 Comment
In subsection 9.2, item 1, add to the end of this sentence the phrase, "or by a duly authorized representative of that person."

Tucson

Response
Signatory requirements are established in 40 CFR 122.22, which specifies that *applications* for a municipality, State, Federal, or other public agency must signed by either a principal executive officer or ranking official. Pursuant to 40 CFR 122.22(b), only reports required by the permit and other information requested by the Director can be signed by a *duly authorized representative*. No changes were made to the permit in response to this comment.

J.10 Comment
The conditions set forth for in this section (section 9) are adequately detailed in State statute. Including these conditions in the permit itself is unnecessary. This section should be deleted.

Mesa

Response
Pursuant to 40 CFR 122.41 "The following conditions apply to all NPDES permits... "...conditions to NPDES permits shall be incorporated into the permits either expressly or by reference." For clarity and ease in referencing standard conditions, the conditions are expressly included in AZPDES permits.

No changes were made to the permit in response to this comment.

J.11 Comment
Sections 9.14 and 9.15 – The definitions of "bypass" and "upset" do not apply to stormwater discharges from MS4s. Therefore, these sections should be deleted.

Mesa

Response
The federal definitions of "bypass" and "upset" are found in 40 CFR 122.41(m) and (n), respectively (Conditions Applicable to all State Permits) which states that "The following conditions apply to all NPDES permits." It is not clear that these provisions would never be applicable in the context of this permit. Note also that these conditions are included in EPA's 2008 stormwater permit for the industrial sector (EPA Multi Sector General Permit, September 29, 2008).

No changes were made to the permit in response to this comment.

K PERMIT PART 10

K.1 Comment

Unlike other definitions in the Permit that identify a source citation following them, "BMP" has no citation. ADEQ should use the complete definition of BMP from the A.R.S. §49-201(3) in the Permit. This definition includes the sentence "[e]conomic, institutional, and technical factors shall be considered in developing best management practices." This statutory definition is found in the General Provisions (Article 1) of Title 49, Chapter 2, resulting in its application to all of the programs described therein. ADEQ refers to BMPs in many facets of their water quality programs, such as in aquifer protection general permits, reuse general permits and drywell provisions. The definition of the term should be consistent across the breadth of facilities covered by Chapter 2, including MS4 AZPDES permits. ADEQ uses a definition in the Permit that is different than that contained in either 40 CFR 122.2 or A.R.S. 49-201(3), in effect, creating a new definition that is inconsistent with both of the former definitions.

Phoenix Tucson

Response

As applicable, the definition of Best Management Practices is consistent with 40 CFR 122.2, A.R.S. 49-201(3), and Section 402(p)(3) of the Clean Water Act. A portion of the definition included in 40 CFR 122.2 addresses plant site run off and is not directly applicable to an MS4 and is therefore not included in the permit definition. The inclusion of "economic, institutional, and technical factors..." found in A.R.S. 49-201(3) is a provision not included in the permit definition as this could be construed as being less stringent than what federal provisions require (this condition does not exist in federal rule or statute).

With the exception "refers to" was replaced with "means" in the permit definition no other changes were made as a result of this comment.

K.2 Comment

In the definition for "Municipal Separate Storm Sewer", item 2, change "of" to "or."

Phoenix Tucson

Response

The correction was made as indicated.

K.3 Comment

As noted above, the Draft Permit does not define the term "post-construction," despite using that term in several locations. The Draft Permit also does not define the terms "Priority Outfalls", "High Risk Facility," "Construction Site," and "Construction Facilities" despite using the terms throughout. The Chamber requests that ADEQ provide definitions of these terms. The definitions relating to "construction" should be based on the federal definition of "construction activities" to avoid imposing permit requirements more stringent than the federal requirements in violation of A.R.S. § 49-255.01(B). Federal NPDES regulations define "construction activities" as "clearing, grading, and excavating resulting in a land disturbance." 40 C.F.R. § 122.26(b)(14). Additionally, ADEQ should replace the term "new developments" used in Appendix A, Part I(B) with the defined term "construction site," or else define the term "new developments" to be consistent with the federal definition of "construction activities."

David Kimball

Response
As a result of this comment the term "construction site" is added to the definitions in Section 10 of the permit. The term "construction facility" is not used in the permit and is therefore not defined. The terms "high risk facilities" and "priority outfalls" as used in this permit are contextually described in Appendix A, Part IV.B and Part III.D, respectively, and therefore do not warrant separate definitions.

While no definition of the term "post construction" was added to the permit, the term is used in reference to the permittee's requirement that the SWMP address controls to reduce pollutants in discharges from the MS4 after construction (activities) are completed (i.e., post-construction), see 40 CFR 122.26(d)(2)(iv)(A)(2). Post construction stormwater management activities generally refers to control techniques, system design, engineering methods, and other such provisions used on a permanent basis to control runoff once construction activities are completed.

Consistent with comments from U.S. EPA, the public noticed draft of Appendix A, Part I(B) was revised to include "significant redevelopment" in addition to "new development" for post construction stormwater management. The uses assume their common meaning as used in the context of stormwater (NPDES/AZPDES) program and are not otherwise defined.

L. APPENDIX A

General Note:

On August 26, 2008 U.S. EPA conducted a program interview with the city of Phoenix to evaluate and assess compliance with their 1997 MS4 permit. This evaluation was primarily focused on program deficiencies identified by EPA in its 2001 audit (EPA, February 25, 2002) of the Phoenix stormwater program, namely the control of pollutants from industrial and commercial sources and the detection and elimination of illicit discharges. EPA's findings of the 2008 interview are documented in the October 16, 2008 evaluation report.

In response to EPA's 2001 and 2008 findings of the Phoenix stormwater program, measurable goals specified in Appendix A, Parts III.E and F, and V.C were revised to address identified program deficiencies; however, the purpose and intent of these parts are unchanged.

L.1 Comment
Several subsections require new employee training (e.g., III.A.1, IV.A, V.A, and VI.A) at least two times per year. However, it is not practical to offer new employee training when no new employees have been hired into the applicable job classifications. Please provide language that accounts for this likely prospect.

Phoenix

Response
Appendix A was revised in the referenced parts to clarify that if no new employees were hired or retained in a given period the permittee must document this condition in the Annual Report.

L.2 Comment
Subsection IV.C (2) Inspections: ADEQ has included two measurable goals. The second one is very prescriptive – requiring the City to initiate improvements in three months, set a schedule for implementation, and track progress. This seems to be more appropriate for an Administrative Order rather than an AZPDES permit. Unless ADEQ

has some reason to believe that the City has failed to adequately address problems identified during inspections, this language is unnecessary and excessive. The City would prefer that we only have the first Measurable Goal. But, if the second measurable goal must remain, the City requests that the goal be reworded to read "Identify municipal facilities inspected each year in the Annual Report."

Phoenix

Response
This goal relates to municipal facilities that are determined as "high risk." Therefore, tracking, follow-up, and prompt correction of identified problems is a priority.

No changes were made to the permit in response to this comment.

L.3 Comment
Subsection IV.E: Municipal System Maps IV.E(3)(b) – Polygon layer showing the drainage area associated with each major outfall: Due to the potential cost to implement this requirement and the City's current budget constraints, the City requests that this requirement be removed from the current permit term and added to the study for 4th year Annual Report. In the interim, this could be reworded to include the drainage area associated with each monitoring station.

Phoenix

Response
Appendix A, subsection IV.E(3) was revised to require mapping of each of the *monitored outfalls* identified in Table 1 of the permit, and the associated drainage areas for this permit term.

L.4 Comment
Subsection V.C - The requirement to increase our level of industrial inspections from 750 to 1700 during a five year period will be extremely difficult for the City to achieve and will yield little real reduction in pollutant loads to our outfalls. Most inspections the City currently performs are concentrated on high pollutant load industries or SIC codes. The most significant violation from a majority of these inspections is the lack of a current storm water management plan on site. While we do achieve benefits from a small number of these sights we believe that almost tripling the number of inspections will not yield a tripling or even doubling of the small pollutant load reduction it achieves. The City believes that a public awareness campaign is much more effective if conducted county wide and not one business owner at a time, particularly if that business owner is one with a low probability of polluting SIC code such as textile manufacturing or auto glass repair

Phoenix

Response
One of the findings of EPA's October 2001 evaluation of the City's stormwater program was the limited number of industrial and commercial inspections conducted by the City on an annual basis. EPA determined it was difficult to asses how a permittee can effectively control the discharges of stormwater pollutants from industrial and commercial facilities to the storm sewer system without having an effective field presence. ADEQ concurs with EPA in the matter that the City inspection program should be expanded and revised. Moreover, Phoenix was consulted with about the number of inspections feasible before the goal of 1,700 was inserted in the draft permit.

The Department does not necessarily agree with the conclusion that a public awareness campaign is more effective than a robust inspection program. Both elements, individual

inspections and a public awareness campaign, together work toward the permit and program objectives.

No changes were made to the permit in response to this comment.

L.5 Comment

Traditionally, the selection and implementation of BMPs and establishment of measurable goals has been the responsibility of the permittee. This approach has been used to allow for flexibility in stormwater programs since each MS4 operates under radically different conditions based on the design of their systems, distribution of land uses, etc. Appendix A is inappropriate and should be deleted. Instead, the permits should only require that the City of Phoenix submit a SWMP detailing BMPs and measurable goals selected by the permittee for their stormwater program. Thereafter, the SWMP will act as the document that develops the program that allows the City to comply with the CWA.

Mesa

Response

The BMPs and measurable goals included in Appendix A are the baseline specified in the permit. It remains the permittee's requirement to identify and implement additional BMPs, as necessary, to maintain permit compliance (see Permit Section 5.0). The BMPs and corresponding measurable goals specified in the permit are the result of several factors, including EPA's 2001 Program Evaluation, and other public and legal concerns related to previous MS4 permits at a nationwide level.

Because this is an individual permit specific to Phoenix, the BMPs and measurable goals listed in Appendix A of this permit are not necessarily the same as those that will be specified in individual permits for other Phase I MS4s. ADEQ intends to request input from each MS4 on developing appropriate measurable goals for each permit.

No changes were made to the permit in response to this comment.

L.6 Comment

Part III (A)(1) – This section should be revised for clarification as follows: "Training to educate and update stormwater inspectors and other stormwater staff ..." Current wording as "and other" indicates that this applies to stormwater inspectors.

Mesa

Response

This section was revised to read "Training to educate and update inspectors and ~~other~~ stormwater staff...." The objective of this measurable goal and corresponding BMP is to expand the permittee's stormwater program to all appropriate city departments. It is noted in EPA's, Phoenix Program Evaluation Report (February 25, 2002) one of the recognized program deficiencies was the lack of interdepartmental coordination. This permit, including the BMPs and corresponding measurable goals specified in Appendix A, is written to address recognized program deficiencies.

L.7 Comment

Parts III (A), (C), and (D) should be revised to include *"...outfalls that discharge to a water of the United States as identified by the ADEQ in the permit...."*

Mesa

Response
The terms "outfall" and "major outfall" are defined in section 10. For example, the definition for "outfall" specifies it is a "...point source where a municipal storm sewer discharges to waters of the United States." As this permit authorizes the permittee to discharge to all waters of the U.S. it is not necessary to specify which waters of the U.S. the permittee is authorized to discharge to. To do so could have the unintended consequence of limiting the permittee to discharging to a particular receiving water.

No changes were made to the permit in response to this comment.

L.8 **Comment**
Part III (D)(1), first bullet – Section should be revised as follows: "Major outfalls that discharge to an impaired or unique ~~receiving~~ water or other perennial water."

Mesa

Response
The term "receiving water" is used throughout 40 CFR 122 and used in this permit to refer to waters of the U.S. to which the permitted MS4 is discharging. However, the term "receiving" was removed from this location.

L.9 **Comment**
Part IV (B)(2), third bullet item – Determining a "substantial" pollutant discharge is vague and offers inadequate guidance. This section should be revised as follows to allow for judgment on the definition of a substantial pollutant load: "Based on the inventory, the ~~MS4~~ permittee shall review the potential pollutants and other factors of risk at such facilities and prioritize them for ~~an on-site review to determine whether they may have a potential to cause a substantial~~ pollutant load potential (i.e., identify 'high risk' facilities)."

Mesa

Response
The focus of this BMP and associated measurable goal is predicated on the permittee's inventory and prioritization of high risk facilities and identifying those facilities that have a potential to cause a substantial pollutant load (based on factors of risk identified by the permittee). No changes were made to the permit in response to this comment.

L.10 **Comment**
Part IV (D)(1), measurable goal – This requires reporting in linear miles the cleaning associated with catch basins, storm drain inlets, and retention/detention basins. Reporting for these types of structures should be on a straight number basis (e.g. 150 catch basins cleaned).

Mesa

Response
The measurable goal was revised to specify appropriate units when reporting (unit numbers, miles, etc).

L.11 **Comment**
Part V (B)(2) –The CWA only requires that in addition to the industries specified in 40 CFR 122.26(d)(2)(iv)(C), the permittee shall also inspect other industries "... that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system." The requirements in this section are more restrictive than required by the CWA, which is prohibited by 49-255.01. This section should be revised as follows: "Other industrial ~~or commercial sources (or categories of sources)~~

facilities ~~*which may be significant sources of pollutants*~~ *that the permittee determines are contributing a substantial pollutant loading to the municipal storm sewer system.*"

Mesa

Response
The BMP and associated measureable goal to inspect other industrial or commercial facilities which may be a significant source of pollutants is consistent with the overall objective of the CWA to reduce the discharge of pollutants to the maximum extent practicable. Inspection of other industrial and commercial facilities also contributes to the detection and elimination of illicit discharges.

No changes were made to the permit in response to this comment.

L.12 Comment
Part V (C) – The specific valuation of 1,700 is inappropriate goal. This should be more flexible to allow for changes in staffing levels between the years. This section should be revised as follows: "During this 5 year permit, the City of Phoenix shall ~~*at a minimum*~~ *inspect* ~~*1700*~~ *all industrial facilities that are identified in Part V.B ..."*

Mesa

Response
The specific wording of this provision was established from input from Phoenix prior to public notice.

No changes were made to the permit in response to this comment.

L.13 Comment
Part VI (C)(2) – Receipt of an NOI can also serve the purposes of the MS4 (knowing what the activities are and where they are located). The requirement for the "authorization document" is to ensure compliance with the State program. This can be done at the time of inspection when the MS4 determines if coverage has been obtained. Section should be revised as follows: "Require a copy of the ADEQ Notice of Intent form or authorization document for non-municipal construction projects ..."

Mesa

Response
The NOI does not necessarily demonstrate that it was submitted to ADEQ or that permit coverage was obtained. Moreover, the AZPDES CGP (AZG2008-001) requires the "operator" to submit a copy of the certificate authorizing coverage to the MS4.

No changes were made to the permit in response to this comment.

M. APPENDIX B

M.1 Comment
Part 3D: Municipal Facilities: The fourth bullet should apply only to municipally owned ***and operated*** *facilities (consistent with Section IV.B of Appendix A).*

Phoenix

Response
Part 3D was revised as suggested, consistent with Appendix A, Section IV.B.

M.2 **Comment**
*Part 13: Attachments - Third item: This bullet requires the City to provide a list of changes to the outfall inventory. Since we are only required to provide a list of major outfalls (not **all** outfalls), is this requirement specifically related to the major outfall inventory? Additionally, the City of Phoenix is requesting to further evaluate the requirement to provide the drainage area for all major outfalls, and only provide drainage area for monitoring sites at this time. This would be consistent with the discussion and agreement on this point previously reached with ADEQ.*

Phoenix

Response
Part 13 of Appendix B was revised to specify the required listing is limited to *major* outfall (not all outfalls) and that the mapping of drainage basins for this term is limited to monitored outfalls (identified in Table 1 of the permit).

N. APPENDIX C

N.1 **Comment**
Revise the term "management practices" to "best management practices."

Mesa

Response
Where applicable, the term "management practices" was replaced with "best management practices."

N.2 **Comment**
Replace the term "minimize" with "reduce."

Mesa

Response
Where applicable, the term "minimize" was replaced with "reduce."

N.3 **Comment**
Municipal Facilities, Measures to Reduce Pollutant from Residential and Commercial Areas, Drainage System Maintenance (structural controls) – The use of the term "structural controls" is confusing and undefined. Delete term.

Mesa

Response
Structural controls are one type of BMP (see BMP definition in section 10). Examples of structural controls include: detention facilities, infiltration facilities, and biofilters, and inlet filters. No changes were made to the permit in response to this comment.

N.4 **Comment**
Industrial Sites, Measures to Control Pollutants – The use of the term "monitor and control pollutants" indicates the permittee is to conduct sampling of these facilities. In fact, that is not what the BMPs and measurable goals described below would accomplish. This section should be revised as follows: "A description of a program to ~~monitor and control pollutants in stormwater discharges from~~ identify and inspect industrial facilities ~~that contribute pollutants to the MS4, including the following information~~ for compliance with municipal stormwater ordinances:"

Mesa

Response
This requirement for the permittee to monitor and control pollutant discharges from industrial facilities is consistent with those requirements specified in 40 CFR 122.26(d)(2)(iv)(C). Some instances may require the permittee to conduct analytical monitoring while visual monitoring may be adequate in other circumstances. No changes were made to the permit in response to this comment.

N.5 Comment
Industrial Sites, Measures to Control Pollutants, Identify Priorities and Implementing Controls, first bullet item – Inventory should be limited to those facilities identified and inventoried under the conditions expressed in Appendix A, Part V (B) and not all the facilities as stated herein. This section should be revised for consistency with federal requirements.

Mesa

Response
The SWMP requirements are consistent with the measurable goals specified in Appendix A, Part V(B)(2). See also comment / response L.12.

No changes were made to the permit in response to this comment.

N.6 Comment
Construction Sites, Measures to Control Pollutants from Construction Sites – It is not clear why there are significant variations in the wording between the industrial section and construction section).

Mesa

Response
The SWMP requirements specified in Appendix C are consistent with the requirements of 40 CFR 122.26(d)(2)(iv)(C) and (D), industrial program and construction program, respectively. Moreover, the variation in the wording is because the programs are different and have different requirements.

No changes were made to the permit in response to this comment.

N.7 Comment
Construction Sites, Measures To Control Pollutants From Construction Sites, Review Construction Site Plans, bullet item 4 – The ADEQ requires the permittee to review construction plans, specifically Stormwater Pollution Prevention Plans (SWPPP), prior to approval of new construction projects (assumed to be for both municipal and private projects). Many of the grading and drainage plans submitted detail structural BMPs to be implemented, but these plans do not meet the requirement of a SWPPP as detailed by the ADEQ in the CGP. The SWPPP is generally not reviewed by a municipality until such time that an inspection is conducted, and the document must meet municipal standards at that time. Municipalities issue building permits and review construction plans that must meet minimum the post-construction development requirements. This section should be revised as follows: "...new construction projects ~~(such as municipal stormwater permits)~~ upon verification that construction plans ~~(stormwater pollution prevention or management plans)~~ comply with municipal stormwater requirements ...."

Mesa

Response
As documented in EPA's, Phoenix Program Evaluation Report (February 25, 2002), some permittees incorrectly assume the City's requirement for a stormwater management plan (or grading and drainage plan) fulfills the SWPPP requirement specified in the AZPDES Construction General Permit. While this SWMP provision does not require the MS4 to review stormwater pollution prevention plans (SWPPPs) for compliance with Arizona's Stormwater Construction General Permit (CGP), it does require the MS4 to review plans (SWPPPs *or* management plans) to ensure they satisfy city ordinance(s) and requirements. Some municipalities choose to require construction site operators to submit SWPPPs that meet ADEQ permit requirements to fulfill this condition. Others require submittal of alternative documents.

No changes were made to the permit in response to this comment.